## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

| | | |
|---|---|---|
| Product form | : | Substance |
| Trade name | : | RADIACID 0606 |
| IUPAC name | : | Hexanoic acid |
| EC no. | : | 205-550-7 |
| CAS No. | : | 142-62-1 |
| REACH registration No. | : | 01-2119978228-24 |
| C&L notification reference no | : | 02-2119692941-27-0000 |
| Label name | : | Caproic acid |

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### Relevant identified uses

| | | |
|---|---|---|
| Main use category | : | Industrial use |
| Use of the substance/mixture | : | Chemical intermediate |

| Title | Life cycle stage | Use descriptors |
|---|---|---|
| General overview of industrial uses of commercial fatty acids | Industrial | SU0, SU1, SU4, SU5, SU8, SU9, SU10, SU17, SU23, PC0, PC9a, PC9b, PC9c, PC14, PC15, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC32, PC34, PC35, PC37, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC12, PROC13, PROC14, PROC15, PROC17, PROC18, PROC19, PROC21, PROC23, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ERC8a, ERC8c, ERC8d, ERC8f, ERC9a, ERC9b, ERC10a, ERC11a |
| General overview of professional uses of commercial fatty acids | Professional | SU0, SU1, SU4, SU5, SU8, SU9, SU10, SU17, SU23, PC0, PC8, PC20, PC21, PC27, PC28, PC31, PC35, PC39, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19, ERC4, ERC5, ERC8a, ERC8b, ERC8c, ERC8d, ERC8f, ERC9b |
| General overview of consumer uses of commercial fatty acids | Consumer | PC0, PC1, PC3, PC8, PC27, PC28, PC29, PC31, PC35, PC39, ERC8a, ERC8c, ERC8d, ERC8f |
| General overview of manufacturing uses of commercial fatty acids | Manufacture | SU3, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15, ERC1 |
| General overview of formulation uses of commercial fatty acids | Formulation | SU3, PC0, PC3, PC8, PC9a, PC9b, PC9c, PC18, PC20, PC23, PC24, PC27, PC28, PC31, PC32, PC34, PC36, PC39, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC12, PROC13, PROC14, PROC15, PROC21, PROC24, ERC2, ERC3 |
| Exposure Scenario FA C6<br>(Association ref code: FAC Exposure Scenario FA C6) | | |

Full text of use descriptors: see section 16

## 1.3. Details of the supplier of the safety data sheet

OLEON N.V.
Assenedestraat 2
BE 9940 Ertvelde
Belgium
T +32 9 341 10 11, F +32 9 341 10 00
sds@oleon.com, www.oleon.com

## 1.4. Emergency telephone number

Emergency number : 24/7 EMERGENCY NUMBER (SGS ERS; Oleon contract nr 76858)
+32 3 575 55 55 (worldwide); +1 888 765 6554 (USA tollfree)

| Country/Area | Organisation/Company | Address | Emergency number | Comment |
|---|---|---|---|---|
| | World directory of poisons centres (Yellow Tox)<br>WHO-OMS | Website | http://www.who.int/gho/phe/chemical_safety/poisons_centres/en/ | |

# SECTION 2: Hazards identification

## 2.1. Classification of the substance or mixture

### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 1, Sub-Category 1C H314
Full text of H- and EUH-statements: see section 16

### Adverse physicochemical, human health and environmental effects

No additional information available

## 2.2. Label elements

### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05

Signal word (CLP) : Danger
Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage.
Precautionary statements (CLP) : P260 - Do not breathe mist, spray, vapours.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

## 2.3. Other hazards

Other hazards which do not result in classification : None under normal conditions.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance type : Mono-constituent

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|---|---|---|
| Hexanoic acid | CAS No.: 142-62-1<br>EC no.: 205-550-7<br>REACH-no: 01-2119978228-24 | > 98 | Skin Corr. 1C, H314 |

Full text of H- and EUH-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Keep the victim calm, avoid physical strain. Prevent cooling by covering the victim (no warming up). Ingestion of large quantities: immediately to hospital. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Take victim to fresh air, in a quiet place in an half laying position, do artificial respiration if necessary and urgently take medical advice. If victim is in shock, place him on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Keep watching the victim. Give psychological aid.

First-aid measures after inhalation : Remove victim to fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Wash off immediately with soap and plenty of water. Continue to rinse for at least 15 minutes.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Consult an ophthalmologist if irritation persists. Do not apply (chemical) neutralizing agents.

First-aid measures after ingestion : Rinse mouth out with water. Ingestion of large quantities: immediately to hospital. Call a poison center (www.who.int/ipcs/poisons/centre/directory/en).

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : No supplementary information available.

Symptoms/effects after inhalation : Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

Symptoms/effects after skin contact : Tingling/irritation of the skin.

Symptoms/effects after eye contact : Irritation of the eye tissue.

Symptoms/effects after ingestion : Possible oesophageal perforation. Nausea. Vomiting. Abdominal pain. Burns to the gastric/intestinal mucosa.

### 4.3. Indication of any immediate medical attention and special treatment needed

No supplementary information available.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : AFFF foam. BC-powder. Carbon dioxide. Dry sand. Dry chemical powder. Use the extinguishing media recommended for the burning materials and fire situation.

Unsuitable extinguishing media : Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD: Combustible. In finely divided state: increased fire hazard. INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard.

Explosion hazard : DIRECT EXPLOSION HAZARD: Fine dust dispersed in air may ignite. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.

Reactivity in case of fire : On burning: release of carbon monoxide/carbon dioxide.

### 5.3. Advice for firefighters

Other information : No supplementary information available.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows. In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows. In case of dust production: stop engines and no smoking. In case of dust production: no naked flames or sparks. Dust: spark-/explosionproof appliances/lighting equipment. Wash contaminated clothing before reuse.

#### For non-emergency personnel

Protective equipment : See "Material-Handling" to select protective clothing.

#### For emergency responders

Protective equipment : For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Prevent soil and water pollution.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean contaminated surfaces with a soap solution. Flush/dilute with water. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or powdered limestone.

Other information : No supplementary information available.

### 6.4. Reference to other sections

Concerning disposal elimination after cleaning, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Handling temperature : ≥ 10 °C above melting point

### 7.2. Conditions for safe storage, including any incompatibilities

Information on mixed storage : KEEP AWAY FROM: Oxidizing agents. reducing agents. bases. strong bases.
Storage area : Store in a dry area. Meet the legal requirements. Store at room temperature.
Special rules on packaging : Store in a closed container. Suitably labelled. Meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials : SUITABLE MATERIAL: Stainless steel. aluminium. glass. steel with plastic inner lining.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

#### Personal protection equipment

**Personal protective equipment:**

Gloves. Face shield. Protective clothing. In case of dust production: protective goggles. Dust production: dust mask with filter type P2.

**Personal protective equipment symbol(s):**

#### Skin protection

**Other skin protection**

**Materials for protective clothing:**

Good resistance: Rubber

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid
Colour : colourless to yellow. light brown.
Appearance (room temperature) : Liquid.
Molecular mass : 116.16 g/mol
Odour : Characteristic. unpleasant odour.
Odour threshold : Not available
Melting point : ca. -4 °C
Freezing point : Not available
Boiling point : 203 °C (1013 hPa)
HMIS Flammability : Not available
Lower explosion limit : Not available

| | | |
|---|---|---|
| Upper explosion limit | : | Not available |
| Flash point | : | 104 °C (Open cup, ISO 2592) |
| Auto-ignition temperature | : | 380 °C (1013 hPa, T2) |
| Decomposition temperature | : | > 250 °C |
| SADT | : | Not applicable |
| pH | : | Not available |
| Viscosity, kinematic | : | 3.452 $mm^2/s$ |
| Viscosity, dynamic | : | ca. 3.2 mPa·s (20°C) |
| Solubility | : | Water: 1.1 g/100ml (25°C) |
| Partition coefficient n-octanol/water (Log Kow) | : | Not available |
| Partition coefficient n-octanol/water (Log Pow) | : | 1.75 (Weight of evidence approach, Equivalent or similar to OECD 107, 25 °C) |
| Vapour pressure | : | < 0.001 hPa (20°C) |
| Vapour pressure at 50 °C | : | Not available |
| Density | : | ca. 927 $kg/m^3$ (20°C) |
| Relative density | : | Not available |
| Relative vapour density at 20°C | : | 4 |
| Relative density of saturated gas/air mixture | : | 1 |
| Particle characteristics | : | Not applicable |

### 9.2. Other information

#### Information with regard to physical hazard classes

| | | |
|---|---|---|
| Explosion limits | : | 1.3 – 9.3 Vol-% |

#### Other safety characteristics

| | | |
|---|---|---|
| Minimum ignition energy | : | No data available in the literature |
| Specific conductivity | : | No data available in the literature |
| VOC content | : | ≈ 100 % (2004/42/EC; SR 814.018) |
| Other properties | : | Gas/vapour heavier than air at 20°C,Slightly volatile |
| Additional information | : | This product is absent from Annex 1 and Annex 2 of the Swiss ordinance 814.018 (OVOC) |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

On burning: release of carbon monoxide/carbon dioxide.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

No supplementary information available.

### 10.5. Incompatible materials

No supplementary information available.

### 10.6. Hazardous decomposition products

No supplementary information available.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

| RADIACID 0606 (142-62-1) | |
|---|---|
| LD50 oral rat | > 2000 mg/kg (BUA Report 241) |

Skin corrosion/irritation : Causes severe skin burns.
Serious eye damage/irritation : Assumed to cause serious eye damage
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

| RADIACID 0606 (142-62-1) | |
|---|---|
| Viscosity, kinematic | 3.5 $mm^2/s$ |

### 11.2. Information on other hazards

#### Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance/mixture has no endocrine disrupting properties.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). TA-Luft Klasse 5.2.5/I.
Ecology - water : Mild water pollutant (surface water)
Harmful to fishes
Harmful to aquatic organisms
Slightly or not bioaccumulative
Not readily biodegradable
BOD (% of ThOD) = 9
Hazardous to the aquatic environment, short–term (acute) : Not classified
Hazardous to the aquatic environment, long–term (chronic) : Not classified

| RADIACID 0606 (142-62-1) | |
|---|---|
| LC50 - Fish [1] | 88 mg/l (96 h, Pimephales promelas, Static system, Fresh water, Experimental value, Lethal) |

### 12.2. Persistence and degradability

| RADIACID 0606 (142-62-1) | |
|---|---|
| Persistence and degradability | Rapidly degradable |

### 12.3. Bioaccumulative potential

| RADIACID 0606 (142-62-1) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | 1.75 (Weight of evidence approach, Equivalent or similar to OECD 107, 25 °C) |

### 12.4. Mobility in soil

| RADIACID 0606 (142-62-1) | |
|---|---|
| Surface tension | 23.4 mN/m (70 °C) |
| Ecology - soil | Expected to be highly mobile in soil. |

### 12.5. Results of PBT and vPvB assessment

| RADIACID 0606 (142-62-1) |
|---|
| This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII |
| This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

### 12.7. Other adverse effects

| RADIACID 0606 (142-62-1) | |
|---|---|
| Other information | Readily biodegradable |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Disposal : Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite,Scoop absorbed substance into closing containers,Carefully collect the spill/leftovers,Damaged/cooled tanks must be emptied,See "Material-handling" for suitable container materials,Clean contaminated surfaces with an excess of water,Take collected spill to manufacturer/competent authority,Wash clothing and equipment after handling

Regional waste regulation : No supplementary information available.

Ecological waste information : Wastes not otherwise specified. Hazardous waste (91/689/EEC). Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber. packaging containing residues of or contaminated by dangerous substances.

European List of Waste (LoW, EC 2000/532) : No supplementary information available

HP Code : HP8 - "Corrosive:" waste which on application can cause skin corrosion.

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| **14.1. UN number or ID number** | | | | |
| UN 2829 | UN 2829 | UN 2829 | UN 2829 | UN 2829 |
| **14.2. UN proper shipping name** | | | | |
| CAPROIC ACID | CAPROIC ACID | Caproic acid | CAPROIC ACID | CAPROIC ACID |
| **Transport document description** | | | | |
| UN 2829 CAPROIC ACID, 8, III, (E) | UN 2829 CAPROIC ACID, 8, III | UN 2829 Caproic acid, 8, III | UN 2829 CAPROIC ACID, 8, III | UN 2829 CAPROIC ACID, 8, III |
| **14.3. Transport hazard class(es)** | | | | |
| 8 | 8 | 8 | 8 | 8 |
| | | | | |
| **14.4. Packing group** | | | | |
| III | III | III | III | III |
| **14.5. Environmental hazards** | | | | |
| Dangerous for the environment: No | Dangerous for the environment: No<br>Marine pollutant: No<br>EmS-No. (Fire): F-A<br>EmS-No. (Spillage): S-B | Dangerous for the environment: No | Dangerous for the environment: No | Dangerous for the environment: No |
| No supplementary information available | | | | |

### 14.6. Special precautions for user

**Overland transport**

| | | |
|---|---|---|
| Transport regulations (ADR) | : | Subject to the provisions |
| Classification code (ADR) | : | C3 |
| Limited quantities (ADR) | : | 5l |
| Excepted quantities (ADR) | : | E1 |
| Packing instructions (ADR) | : | P001, IBC03, LP01, R001 |
| Mixed packing provisions (ADR) | : | MP19 |
| Portable tank and bulk container instructions (ADR) | : | T4 |
| Portable tank and bulk container special provisions (ADR) | : | TP1 |
| Tank code (ADR) | : | L4BN |
| Vehicle for tank carriage | : | AT |
| Transport category (ADR) | : | 3 |
| Special provisions for carriage - Packages (ADR) | : | V12 |
| Hazard identification number (Kemler No.) | : | 80 |

| | | |
|---|---|---|
| Orange plates | : | |
| Tunnel restriction code (ADR) | : | E |
| EAC code | : | 2X |

### Transport by sea

| | | |
|---|---|---|
| Transport regulations (IMDG) | : | Subject to the provisions |
| Limited quantities (IMDG) | : | 5 L |
| Excepted quantities (IMDG) | : | E1 |
| Packing instructions (IMDG) | : | P001, LP01 |
| IBC packing instructions (IMDG) | : | IBC03 |
| Tank instructions (IMDG) | : | T4 |
| Tank special provisions (IMDG) | : | TP1 |
| Stowage category (IMDG) | : | A |
| Segregation (IMDG) | : | SGG1, SG36, SG49 |
| Properties and observations (IMDG) | : | Oily, colourless or yellowish liquid. Melting point: -4°C. Partially miscible with water. Corrosive to mild steel. Causes burns to skin, eyes and mucous membranes. |

### Air transport

| | | |
|---|---|---|
| Transport regulations (IATA) | : | Subject to the provisions |
| PCA Excepted quantities (IATA) | : | E1 |
| PCA Limited quantities (IATA) | : | Y841 |
| PCA limited quantity max net quantity (IATA) | : | 1L |
| PCA packing instructions (IATA) | : | 852 |
| PCA max net quantity (IATA) | : | 5L |
| CAO packing instructions (IATA) | : | 856 |
| CAO max net quantity (IATA) | : | 60L |
| Special provisions (IATA) | : | A803 |
| ERG code (IATA) | : | 8L |

### Inland waterway transport

| | | |
|---|---|---|
| Classification code (ADN) | : | C3 |
| Limited quantities (ADN) | : | 5 L |
| Excepted quantities (ADN) | : | E1 |
| Carriage permitted (ADN) | : | T |
| Equipment required (ADN) | : | PP, EP |
| Number of blue cones/lights (ADN) | : | 0 |

### Rail transport

| | | |
|---|---|---|
| Transport regulations (RID) | : | Subject to the provisions |
| Classification code (RID) | : | C3 |
| Limited quantities (RID) | : | 5L |
| Excepted quantities (RID) | : | E1 |
| Packing instructions (RID) | : | P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID) | : | MP19 |
| Portable tank and bulk container instructions (RID) | : | T4 |
| Portable tank and bulk container special provisions (RID) | : | TP1 |
| Tank codes for RID tanks (RID) | : | L4BN |
| Transport category (RID) | : | 3 |
| Special provisions for carriage – Packages (RID) | : | W12 |

| | | |
|---|---|---|
| Colis express (express parcels) (RID) | : | CE8 |
| Hazard identification number (RID) | : | 80 |

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU-Regulations

#### REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

#### REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

#### REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

#### PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

#### POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

#### Ozone Regulation (2024/590)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

#### Council Regulation (EC) for the control of dual-use items

Not listed on the COUNCIL REGULATION (EC) of dual-use items.

#### VOC Directive (2004/42)

VOC content : ≈ 100 % (2004/42/EC; SR 814.018)

#### Explosives Precursors Regulation (EU 2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

#### Drug Precursors Regulation (EC 273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

#### National regulations

| | | |
|---|---|---|
| Chemical inventories | : | Compliant with AICIS, DSL, EU REACh, IECSC, INSQ, Japan ENCS, Japan ISHL, KECL, NCI, NZIoC, PICCS, TCSI, TECI_DIW, TECI_FDA, TR EAEU, TSCA |
| KKDIK number (Turkey) | : | not preregistered |
| K-REACh (Korea) | : | not preregistered |
| UK-REACh (Great Britain) | : | No DUIN submitted (max.1tpa) |
| Swiss ChemO (SR 813.11) | : | This substance is not subject to the obligation to register pursuant to art.61 of the Chemicals Ordinance (ChemO) |

### Germany

| | | |
|---|---|---|
| Water hazard class (WGK) | : | WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 1667). |
| VOC content | : | ≈ 100 % (2004/42/EC; SR 814.018) |

### Netherlands

| | | |
|---|---|---|
| ABM category | : | B(3) - hazardous for aquatic organisms |
| SZW List of Carcinogenic Substances | : | The substance is not listed |
| SZW List of Mutagenic Substances | : | The substance is not listed |
| SZW List of Reprotoxic Substances – Breastfeeding | : | The substance is not listed |
| SZW List of Reprotoxic Substances – Fertility | : | The substance is not listed |
| SZW List of Reprotoxic Substances – Development | : | The substance is not listed |

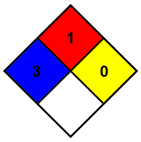
### Denmark

| | | |
|---|---|---|
| Danish National Regulations | : | Young people below the age of 18 years are not allowed to use the product |

## 15.2. Chemical safety assessment

The chemical safety assessment has been carried out, an exposure scenario is attached.

## SECTION 16: Other information

| | | |
|---|---|---|
| Training advice | : | No supplementary information available. |
| Chemical inventories legend | : | AICIS = Australian Inventory of Industrial Chemicals<br>DSL = Canadian Domestic Sustances List<br>EU REACh = European Union REACH Regulation 1907/2006<br>IECSC = Inventory of Existing Chemicals Substances in China<br>INSQ = Mexico National Inventory of Chemical Substance<br>Japan ENCS = Japanese Existing Chemical Substances (ISHL)<br>Japan ISHL = Japanese Existing and New Chemical Substances (CSCL)<br>KECL = Korean Existing Chemical List<br>NCI = Vietnam National Chemical Inventory<br>NZIoC = New Zealand Inventory of Chemicals<br>PICCS = Philippines Inventory of Chemicals and Chemical Substances<br>TCSI = Taiwan Chemical Substance Inventory<br>TECI_DIW = Thailand Existing Chemicals Inventory - Department of Industrial Works List<br>TECI_FDA = Thailand Existing Chemicals Inventory - Food and Drug Administration List<br>TR EAEU = Eurasian Economic Union Unified list of chemicals<br>TSCA = USA Toxic Substances Control Act |
| SDS changed sections | : | 11 - Toxicological information;12 - Ecological information |
| SDS Reason for revision | : | No supplementary information available |
| NFPA health hazard | : | 3 - Materials that, under emergency conditions, can cause serious or permanent injury. |
| NFPA fire hazard | : | 1 - Materials that must be preheated before ignition can occur. |
| NFPA reactivity | : | 0 - Material that in themselves are normally stable, even under fire conditions. |
| NFPA image | : |  |
| Other information | : | No supplementary information available. |

| Full text of H- and EUH-statements: | |
|---|---|
| Skin Corr. 1C | Skin corrosion/irritation, Category 1, Sub-Category 1C |
| H314 | Causes severe skin burns and eye damage. |

| Full text of use descriptors | |
|---|---|
| ERC1 | Manufacture of the substance |
| ERC10a | Widespread use of articles with low release (outdoor) |
| ERC11a | Widespread use of articles with low release (indoor) |
| ERC2 | Formulation into mixture |
| ERC3 | Formulation into solid matrix |
| ERC4 | Use of non-reactive processing aid at industrial site (no inclusion into or onto article) |
| ERC5 | Use at industrial site leading to inclusion into/onto article |
| ERC6a | Use of intermediate |
| ERC6b | Use of reactive processing aid at industrial site (no inclusion into or onto article) |
| ERC6c | Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) |
| ERC6d | Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) |
| ERC7 | Use of functional fluid at industrial site |
| ERC8a | Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) |
| ERC8b | Widespread use of reactive processing aid (no inclusion into or onto article, indoor) |
| ERC8c | Widespread use leading to inclusion into/onto article (indoor) |
| ERC8d | Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |
| ERC8f | Widespread use leading to inclusion into/onto article (outdoor) |
| ERC9a | Widespread use of functional fluid (indoor) |
| ERC9b | Widespread use of functional fluid (outdoor) |
| PC0 | Other |
| PC1 | Adhesives, sealants |
| PC14 | Metal surface treatment products |
| PC15 | Non-metal-surface treatment products |
| PC18 | Ink and Toners |
| PC19 | Intermediate |
| PC20 | Metal surface treatment products |
| PC21 | Laboratory chemicals |
| PC23 | Leather treatment products |
| PC24 | Lubricants, greases, release products |
| PC25 | Metal working fluids |
| PC27 | Plant protection products |
| PC28 | Perfumes, fragrances |
| PC29 | Pharmaceuticals |
| PC3 | Air care products |

| Full text of use descriptors | |
|---|---|
| PC31 | Polishes and wax blends |
| PC32 | Polymer preparations and compounds |
| PC34 | Textile dyes, and impregnating products |
| PC35 | Washing and cleaning products |
| PC36 | Water softeners |
| PC37 | Water treatment chemicals |
| PC39 | Cosmetics, personal care products |
| PC8 | Biocidal products |
| PC9a | Coatings and paints, thinners, paint removers |
| PC9b | Fillers, putties, plasters, modelling clay |
| PC9c | Finger paints |
| PROC10 | Roller application or brushing |
| PROC11 | Non industrial spraying |
| PROC12 | Use of blowing agents in manufacture of foam |
| PROC13 | Treatment of articles by dipping and pouring |
| PROC14 | Tabletting, compression, extrusion, pelettisation, granulation |
| PROC15 | Use as laboratory reagent |
| PROC17 | Lubrication at high energy conditions in metal working operations |
| PROC18 | General greasing /lubrication at high kinetic energy conditions |
| PROC19 | Manual activities involving hand contact |
| PROC2 | Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions |
| PROC21 | Low energy manipulation and handling of substances bound in/on materials or articles |
| PROC23 | Open processing and transfer operations at substantially elevated temperature |
| PROC24 | High (mechanical) energy work-up of substances bound in /on materials and/or articles |
| PROC3 | Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition |
| PROC4 | Chemical production where opportunity for exposure arises |
| PROC5 | Mixing or blending in batch processes |
| PROC6 | Calendering operations |
| PROC7 | Industrial spraying |
| PROC8a | Transfer of substance or mixture (charging and discharging) at non-dedicated facilities |
| PROC8b | Transfer of substance or mixture (charging and discharging) at dedicated facilities |
| PROC9 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |
| SU0 | Other |

| Full text of use descriptors | |
|---|---|
| SU1 | Agriculture, forestry, fishery |
| SU10 | Formulation [mixing] of preparations and/or re-packaging (excluding alloys) |
| SU17 | General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment |
| SU23 | Electricity, steam, gas water supply and sewage treatment |
| SU3 | Industrial uses: Uses of substances as such or in preparations at industrial sites |
| SU4 | Manufacture of food products |
| SU5 | Manufacture of textiles, leather, fur |
| SU8 | Manufacture of bulk, large scale chemicals (including petroleum products) |
| SU9 | Manufacture of fine chemicals |

The classification complies with : ATP 12

SDS EU Oleon Annex II

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

## Annex to the safety data sheet

| Product exposure scenario(s) | |
|---|---|
| **ES Type** | **ES title** |
| Worker | FAC Exposure Scenario FA C6 - Version 1: Exposure Scenario FA C6 |

| Table of contents of the Annex | | |
|---|---|---|
| **Identified Uses** | **Es N°** | **Association ref code** |
| Exposure Scenario FA C6 | 1 | FAC Exposure Scenario FA C6 |

## Annex to the extended Safety Data Sheet (eSDS)

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

**CAS number** : 142-62-1

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### Identified uses

**ES001:** Adhesives, sealants; Manufacture (22, 23, 24, 25, 26, 27, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18, 19, 20, 21) - Formulation or re-packing/Industrial: PROC02, PROC03, PROC04, PROC05, PROC08b, PROC09, PROC10, PROC14; ERC02

**ES002:** Adhesives, sealants; Professional use ("FEICA-UseR 22-"7, "FEICA-UseR 22-"8, "FEICA-UseR 22-"9, "FEICA-UseR 22-"10, "FEICA-UseR 22-"11, "FEICA-UseR 22-"12, "FEICA-UseR 22-"13, "FEICA-UseR 22-"14, "FEICA-UseR 22-"1, "FEICA-UseR 22-"2, "FEICA-UseR 22-"3, "FEICA-UseR 22-"4, "FEICA-UseR 22-"5, "FEICA-UseR 22-"6) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC08a, PROC10, PROC11; ERC08c, ERC08f

**ES003:** Adhesives, sealants ("FEICA-UseR 3-"23, "FEICA-UseR 3-"24, "FEICA-UseR 3-"25, "FEICA-UseR 3-"26, "FEICA-UseR 3-"27, "FEICA-UseR 3-"31, "FEICA-UseR 3-"32, "FEICA-UseR 3-"33, "FEICA-UseR 3-"34, "FEICA-UseR 3-"1, "FEICA-UseR 3-"2, "FEICA-UseR 3-"3, "FEICA-UseR 3-"4, "FEICA-UseR 3-"5, "FEICA-UseR 3-"6, "FEICA-UseR 3-"7, "FEICA-UseR 3-"8, "FEICA-UseR 3-"9, "FEICA-UseR 3-"10, "FEICA-UseR 3-"14, "FEICA-UseR 3-"15, "FEICA-UseR 3-"16, "FEICA-UseR 3-"17, "FEICA-UseR 3-"18, "FEICA-UseR 3-"19) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC04, PROC05, PROC07, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC14; ERC05

**ES004:** Automatic substance metering, feeding into mixing unit Solids Ex. CB, Si (ETRMA 2) - Formulation or re-packing/Industrial: PROC08b; ERC03

**ES005:** Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils (ETRMA 3) - Formulation or re-packing/Industrial: PROC08b; ERC03

**ES006:** Balance grinding and trimming (ETRMA 19) - Formulation or re-packing/Industrial: PROC21; ERC03

**ES007:** Blending (TEGEWA 1) - Formulation or re-packing/Industrial: PROC05, PC24, PC34; ERC02

**ES008:** Casings are selected and cleaned (ETRMA 21) - Formulation or re-packing/Industrial: PROC21; ERC03

**ES009:** Cement and paint application (ETRMA 9) - Formulation or re-packing/Industrial: PROC10; ERC03

**ES010:** Cement application (ETRMA 12, ETRMA 18) - Formulation or re-packing/Industrial: PROC10; ERC03

**ES011:** Compound assembling from stocks (ETRMA 15) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC21; ERC06d

**ES012:** Compound processing; Cooling extruded compound (ETRMA 10) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d

**ES013:** Compound transfer into a vessel, mixing and transfering cement into portable drums (ETRMA 7) - Formulation or re-packing/Industrial: PROC09; ERC03

**ES014:** Consumer use of products such as pH-regulators, flocculants, precipitants etc (EM 64) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PC20; ERC08d

**ES015:** Covers the direct use of the substance by converters including pouring/unloading from drums, bags or containers; and exposures during the processing step and cleaning/maintenance activities, Covers the use as a component in order to further transform them into articles (Croda 4, Croda 5) - Formulation or re-packing/Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC06, PROC08a, PROC08b, PROC09, PROC10, PROC12, PROC13, PROC14; ERC03, ERC05

**ES016:** Covers the use as a component in order to further transform them into articles (Croda 6a, Croda 6b, Croda 9a, Croda 9b, Croda 12a, Croda 12b, Croda 15a, Croda 15b, Croda 18a, Croda 18b) - Formulation or re-packing/Industrial: PROC21, PROC24; ERC03

**ES017:** Covers the use as a component of cleaning and maintenance products including material transfer and preparation. Exposures during cleaning activities (including spraying, brushing, dipping, wiping automated and by hand), hand-mixing and associated laboratory activities. (C9 acid) (ECO 4, ECO 5) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC04, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19; ERC08a

**ES018:** Covers the use as a component of cleaning and maintenance products including material transfer and preparation. Exposures during cleaning activities (including spraying, brushing, dipping, wiping automated and by hand), lubrication at high energy conditions, high energy work-up and related equipment cleaning and maintenance and associated laboratory activities. (C9 acid) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02,

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PROC04, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15, PROC17; ERC04, ERC05, ERC06b, ERC08a

**ES019:** Covers the use as a component of lubricant in an open system including exposures during use due to application by dipping, brushing or spraying. - Professional: ERC08a, ERC08d

**ES020:** Covers the use in compounders plants, including exposures during use (including materials transfer from bulk and semi-bulk and other manual application tasks) and equipment cleaning (Croda 2) - Formulation or re-packing/ Industrial: PROC14; ERC03

**ES021:** Covers the use in lubricants including exposures during use (including material transfer or preparation, application by dipping, brushing or spraying) and draining, maintenance, cleaning of equipment. (C9 acid) - Industrial/ Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PROC11, PROC13; ERC08a

**ES022:** Covers the use in lubricants including exposures during use (including material transfer, mixing/blending, application by dipping, brushing or spraying, ) and draining, maintenance, cleaning of equipment. (C9 acid) - Formulation or re-packing/Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC07, PROC08b, PROC09, PROC10, PROC13; ERC02, ERC04

**ES023:** Covers the use in masterbatch producers plants, including exposures during use (including materials transfer from bulk and semi-bulk and other manual application tasks) and equipment cleaning (Croda 3a, Croda 3b) - Formulation or re-packing/Industrial: PROC21, PROC24; ERC03

**ES024:** Covers the use in polymers production plants, including exposures during use (including materials transfer from bulk and semi-bulk and other manual application tasks) and equipment cleaning (Croda 1) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09; ERC03

**ES025:** Covers the use of a plastic, compound or masterbatch in calendering applications including transfer from storage; pouring/unloading from drums, bags or containers; exposures during moulding and cleaning activities (automated and by hand) and related maintenance; Covers the use as a component in order to further transform them into articles (Croda 13, Croda 14) - Formulation or re-packing/Industrial: PROC05, PROC06, PROC08a, PROC08b, PROC09, PROC12, PROC14; ERC03

**ES026:** Covers the use of a plastic, compound or masterbatch in extrusion applications including transfer from storage; pouring/unloading from drums, bags or containers; exposures during moulding and cleaning activities (automated and by hand) and related maintenance; Covers the use as a component in order to further transform them into articles (Croda 7, Croda 8) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PROC12, PROC14; ERC03

**ES027:** Covers the use of a plastic, compound or masterbatch in injection moulding, blow moulding, rotational moulding applications including transfer from storage; pouring/unloading from drums, bags or containers; exposures during moulding and cleaning activities (automated and by hand) and related maintenance; Covers the use as a component in order to further transform them into articles (Croda 10, Croda 11) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PROC12, PROC14; ERC02, ERC03

**ES028:** Covers the use of a plastic, compound or masterbatch in spread coating or dip coating applications including transfer from storage; pouring/unloading from drums, bags or containers; exposures during enduction or dip coating and cleaning activities (automated and by hand); and related maintenance; Covers the use as a component in order to further transform them into articles (Croda 16, Croda 17) - Formulation or re-packing/Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC08a, PROC08b, PROC09, PROC10, PROC12, PROC13; ERC03, ERC05

**ES029:** Cutting, trimming, regrooving, abrading (ETRMA 29) - Formulation or re-packing/Industrial: PROC21; ERC03

**ES030:** Direct extrusion on the prepared casings of cushion gum layer (ETRMA 26) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d

**ES031:** Drying and/or solvents evaporation (ETRMA 30) - Formulation or re-packing/Industrial: PROC10; ERC03

**ES032:** Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm) (ETRMA 14) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07; ERC06d

**ES033:** Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans (ETRMA 6) - Formulation or re-packing/Industrial: PROC09; ERC03

**ES034:** Extrusion (EM 7) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14, PC32, PC34; ERC06c

**ES035:** Feeding from stock, milling, and feeding the calender (ETRMA 11) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d

**ES036:** Food industry (TNO) - Industrial: ERC02

**ES037:** Formulation & (re)packing of substances and mixtures in batch or continuous operations, including storage, materials transfers, mixing, large and small scale packing, maintenance and associated laboratory activities. (C9 acid) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15; ERC02

**ES038:** Formulation of Construction Chemicals, closed systems (CC-2) - Formulation or re-packing/ Professional: PROC03, PROC08b, PROC09; ERC02

**ES039:** Formulation of Construction Chemicals, open systems (CC-1-1) - Formulation or re-packing/ Professional: PROC05, PROC08b, PROC09; ERC02

**ES040:** Formulation of Construction Chemicals, open systems without local exhaust ventilation (CC-1-2) - Formulation or re-packing/ Professional: PROC05, PROC08b, PROC09; ERC02

**ES041:** Formulation of Construction Chemicals, closed systems (CC-2) - Formulation or re-packing/ Professional: PROC03, PROC08b; ERC02

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**ES042:** Formulation of Pharmaceutical products (OL8) - Formulation or re-packing/Industrial: PROC05; ERC02
**ES043:** Formulation of washing and cleaning products (OL7) - Formulation or re-packing/Industrial: PROC05; ERC02
**ES044:** Handling (TEGEWA 2, TEGEWA 6) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08b, PC24, PC34; ERC04, ERC05
**ES045:** Solvent use (Processing aid) (”FEICA-UseR 3-”40, “FEICA-UseR 3-”41, “FEICA-UseR 3-”35, “FEICA-UseR 3-”36, “FEICA-UseR 3-”37, “FEICA-UseR 3-”38, “FEICA-UseR 3-”39) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC03, PROC07, PROC08a, PROC08b, PROC10, PROC13; ERC04
**ES046:** Industrial use of façade/surface cleaning products (AISE-P907, AISE-P906) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC08a, PROC11, PC35; ERC04
**ES047:** Industrial use of vehicle cleaning products (AISE-P713, AISE-P710, AISE-P711, AISE-P714, AISE-P709, AISE-P712) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC04, PROC08a, PROC10, PROC11, PC35; ERC04
**ES048:** Industrial application of coatings and inks (PC 9a, 9b, 9c, 18) (CEPE AI0101, CEPE AI0102, CEPE AI0201, CEPE AI0202, CEPE AI0301, CEPE AI0302, CEPE AI0303, CEPE AI0309, CEPE AI0310, CEPE AI0311, CEPE AI0103, CEPE AI0104, CEPE AI0203, CEPE AI0204, CEPE AI0502, CEPE AI0503 CEPE AI0504, CEPE AI0505 CEPE AI0506, CEPE AI0002, CEPE AI0003, CEPE AI0004, CEPE AI0601 CEPE AI0607 CEPE AI0613, CEPE AI0602 CEPE AI0608 CEPE AI0614, CEPE AI1001, CEPE AI0501, CEPE AI0105, CEPE AI0106, CEPE AI0107, CEPE AI0603 CEPE AI0609 CEPE AI0615, CEPE AI0604 CEPE AI0610, CEPE AI0605 CEPE AI0611 CEPE AI0616, CEPE AI0606 CEPE AI0612 CEPE AI0617, CEPE AI0901, CEPE AI0304, CEPE AI0305, CEPE AI0306, CEPE AI0307, CEPE AI0308, CEPE AI0312, CEPE AI0207, CEPE AI0001, CEPE AI0108, CEPE AI0110, CEPE AI0205, CEPE AI0206, CEPE AI0208, CEPE AI0209, CEPE AI1002) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PC09a, PC09b, PC09c, PC18; ERC04, ERC05
**ES049:** Industrial finishing processes for textiles, films, fabrics (OL1) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC06; ERC05, ERC06a, ERC06c
**ES050:** Industrial manufacture of coatings and inks (PC9a, 9b, 9c, 18) (CEPE MS0021 MW0021, CEPE MS0022 MW0022, CEPE MS0023 MW0023, CEPE MS0024 MW0024, CEPE MS0032 MW0032, CEPE MS0051 MW0051, CEPE MS0052 MW0052, CEPE MS0013 MW0013, CEPE MS0013 MW0013, CEPE MS0014 MW0014, CEPE MS0014 MW0014, CEPE MS0015 MW0015, CEPE MS0033 MW0033, CEPE MS0071 MW0071, CEPE MS0072 MW0072, CEPE MS0034 MW0034, CEPE MS0035 MW0035, CEPE MS0053 MW0053, CEPE MS0054 MW0054, CEPE MS0111 MW0111, CEPE MS0112 MW0112, CEPE MS0043 MW0043, CEPE MS0044 MW0044, CEPE MS0011 MW0011, CEPE MS0011 MW0011, CEPE MS0012 MW0012, CEPE MS0012 MW0012, CEPE MS0025 MW0025, CEPE MS0026 MW0026, CEPE MS0027 MW0027, CEPE MS0028 MW0028, CEPE MS0070 MW0070, CEPE MS0073 MW0073, CEPE MS0091 MW0091, CEPE MS0092 MW0092, CEPE MS0041 MW0041, CEPE MS0042 MW0042) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09, PC09a, PC09b, PC09c, PC18; ERC02
**ES051:** Industrial use of Construction Chemicals, Service life: indoor (CC-3-1) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC08b, PROC10, PROC13, PROC14; ERC04, ERC05, ERC11a
**ES052:** Industrial use of Construction Chemicals, Service life: outdoor (CC-4-1) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC08b, PROC10, PROC13, PROC14; ERC04, ERC05, ERC10a
**ES053:** Industrial use of Construction Chemicals, without spraying, Service life: outdoor (CC-4-2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08b, PROC10, PROC13, PROC14; ERC04, ERC05, ERC10a
**ES054:** Industrial use of Construction Chemicals, without spraying, Service life: indoor (CC-3-2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08b, PROC10, PROC13, PROC14; ERC04, ERC05, ERC11a
**ES055:** Industrial use of Food beverage and pharmacos products (AISE-P809, AISE-P806, AISE-P804, AISE-P807, AISE-P803, AISE-P810, AISE-P801, AISE-P802, AISE-P805, AISE-P811) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC04, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PC35; ERC04
**ES056:** Industrial use of laundry products (AISE-P108, AISE-P109, AISE-P101, AISE-P104, AISE-P107, AISE-P110) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC08a, PROC08b, PROC09, PC35; ERC04, ERC6b, ERC08a
**ES057:** Industrial use of metal treatment products (AISE-P1001b, AISE-P1004, AISE-P1009, AISE-P1002, AISE-P1001a, AISE-P1006, AISE-P1007, AISE-P1008, AISE-P1003, AISE-P1005, AISE-P1010, AISE-P1011, AISE-P1001) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC10, PROC17, PROC18, PROC23, PC14, PC25, PC35; ERC04, ERC05
**ES058:** Industrial use of quality control (AISE-P1250) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC15, PC21; ERC04
**ES059:** Industrial use of vehicle cleaning products (AISE-P707, AISE-P708) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC04, PROC08a, PC35; ERC04
**ES060:** Industrial use of water treatment products (AISE-P903, AISE-P904, AISE-P905) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC04, PROC08a, PROC08b, PROC09, PC35, PC37; ERC04
**ES061:** Blowing agents (OL2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC12; ERC07, ERC08c
**ES062:** Industrial use of greasing agents (OL3) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC18; ERC04, ERC08f, ERC09b, ERC11a

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**ES063:** Industrial uses (OL6) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC03, PC19; ERC06a
**ES064:** Industrial use resulting in manufacture of another substance (use of intermediates) (ECO 3) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15; ERC06a
**ES065:** Intermediate (P&G/Croda) - Industrial: ERC06a
**ES066:** Laboratory use (AISE-P1200) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC15, PC21; ERC08a
**ES067:** Manual application of precured tread (ETRMA 25) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC21; ERC06d
**ES068:** Manual metering, weighting possible, mainly synthetic rubbers and mixtures (ETRMA 1) - Formulation or re-packing/Industrial: PROC09; ERC03
**ES069:** Manufacture of detergents and maintenance products (AISE-M1, AISE-M8, AISE-M9, AISE-M2, AISE-M3, AISE-M4, AISE-M5, AISE-M6, AISE-M7) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC09, PROC14, PROC15; ERC02
**ES070:** Adhesives, sealants; Manufacture (EM 16, EM 24, EM 25, EM 26, EM 27, EM 17, EM 28, EM 18, EM 9, EM 10, EM 11, EM 19, EM 12, EM 20, EM 13, EM 21, EM 14, EM 22, EM 15, EM 23) - Formulation or re-packing/Industrial/ Professional: PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC12, PROC13, PROC14; ERC02
**ES071:** Artists Supply and Hobby preparations; Manufacture (EM 42, EM 43, EM 44, EM 45) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC05; ERC02
**ES072:** Automotive care products; Manufacture (EM 34, EM 35, EM 36, EM 37) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC06; ERC02
**ES073:** Manufacture of substance - Industrial: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15; ERC01
**ES074:** Air care products; Manufacture (EM 97, EM 98, EM 99, EM 100) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC03; ERC02
**ES075:** Biocidal products; Manufacture (EM 101, EM 102, EM 103, EM 104, EM 105, EM 106, EM 107) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09, PC08; ERC02
**ES076:** Manufacture of cosmetic products (COLIPA M6, COLIPA M8, COLIPA M3, COLIPA M1, COLIPA M5.2, COLIPA M5.1, COLIPA M2, COLIPA M4, COLIPA M7) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15, PC15, PC39; ERC02
**ES077:** Lawn and garden preparations, including fertilizers; Manufacture (EM 50, EM 51, EM 52, EM 53) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC22; ERC02
**ES078:** Metal surface treatment products, including galvanic and electroplating products; Manufacture (EM 1, EM 2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC07, PC14; ERC05
**ES079:** Non-metal surface treatment products; Manufacture (EM 3, EM 4, EM 5, EM 6) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC07, PROC08a, PROC09, PC15; ERC05
**ES080:** Perfumes, fragrances; Manufacture (EM 74, EM 75, EM 76, EM 77) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC28; ERC02
**ES081:** Plant protection products; Manufacture (EM 66, EM 67, EM 68, EM 69) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC27; ERC02
**ES082:** Polishes and wax blends; Manufacture (EM 82, EM 83, EM 84, EM 85) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC31; ERC02
**ES083:** Products such as pH-regulators, flocculants, precipitants etc; Manufacture (EM 58, EM 59, EM 60, EM 61) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC20; ERC02
**ES084:** Water softeners; Manufacture (EM 89, EM 90, EM 91, EM 92) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC36; ERC02
**ES085:** Mixing in closed mixing unit (i.e. Banbury mixer) (ETRMA 4) - Formulation or re-packing/Industrial: PROC05; ERC03
**ES086:** Open mill mixing (tipical for laboratory scale) (ETRMA 5) - Formulation or re-packing/Industrial: PROC05; ERC03
**ES087:** Painting, cement application and tyre treatment with lubricants (ETRMA 28) - Formulation or re-packing/ Industrial: PROC10; ERC03
**ES088:** Part of rubber and rusted cords are removed from casing. Casing cleaning. (ETRMA 22) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC21; ERC06d
**ES089:** Production of agrochemicals - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC03, PC19
**ES090:** Production of food chemicals - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC03, PC19
**ES091:** Production of intermediate in Industrial uses/Lubricants - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC03
**ES092:** Professional use. Use as a solvent; Indoor (Processing aid) (”FEICA-UseR 22-”19, “FEICA-UseR 22-”20, “FEICA-UseR 22-”21, “FEICA-UseR 22-”17, “FEICA-UseR 22-”18) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC08b, PROC10, PROC11, PROC13; ERC08a
**ES093:** Professional use. Use as a solvent; Outdoor (Processing aid) (”FEICA-UseR 22-”24, “FEICA-UseR 22-”25,

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"FEICA-UseR 22-"26, "FEICA-UseR 22-"22, "FEICA-UseR 22-"23) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC08b, PROC10, PROC11, PROC13; ERC08d
**ES094:** Professional use of construction chemicals; Indoor (CC-5-1) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC11, PROC13, PROC19, PC10; ERC08c
**ES093:** Professional use of construction chemicals; Indoor, without spraying (CC-5-2) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC13, PROC19, PC10; ERC08c
**ES096:** Professional use of construction chemicals; Outdoor (CC-6-1) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC11, PROC13, PROC19, PC10; ERC08f
**ES097:** Professional use of construction chemicals; Outdoor, without spraying (CC-6-2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC13, PROC19, PC10; ERC08f
**ES098:** Cosmetic products (ECO 7) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC19; ERC08a
**ES099:** Professional use of façade/surface cleaning products (AISE-P901, AISE-P902) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC08a, PROC11; ERC08d
**ES100:** Professional Use of Food beverage and pharmacos products (AISE-P808) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PC35; ERC08a
**ES101:** Professional use of hand cleaners (AISE-P1300) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC19, PC39; ERC08a
**ES102:** Professional use of maintenance products (AISE-P605) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC08a, PC31; ERC08a
**ES103:** Professional use of medical devices (AISE-P1104, AISE-P1102, AISE-P1103, AISE-P1101) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC04, PROC08a, PROC11, PROC13, PC35; ERC08a
**ES104:** Professional use of vehicle cleaning products - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC04, PROC08a, PROC10, PROC11, PC35; ERC8a
**ES105:** Professional application of coatings and inks (CEPE AP0404, CEPE AP0405, CEPE AP0406, CEPE AP0402, CEPE AP0403, CEPE AP0501, CEPE AP0407, CEPE AP0302, CEPE AP0504 CEPEAP0505, CEPE AP0506 CEPEAP0507, CEPE AP0701, CEPE AP0102, CEPE AP0103, CEPE AP0104, CEPE AP0201, CEPE AP1201, CEPE AP0502, CEPE AP0503, CEPE AP0202, CEPE AP0203, CEPE AP0303, CEPE AP0304, CEPE AP0702, CEPE AP0703, CEPE AP0704, CEPE AP0705, CEPE AP1101, CEPE AP0101, CEPE AP0204, CEPE AP0205, CEPE AP0305, CEPE AP0401, CEPE AP1202, CEPE AP1203) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC03, PROC04, PROC05, PROC08a, PROC10, PROC11, PROC19; ERC08a
**ES106:** Adhesives, sealants (EM 31, EM 32, EM 33, EM 29, EM 30) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC08b, PROC10, PROC11, PROC19; ERC08a
**ES107:** Air care products (AISE-P501, AISE-P504, AISE-P503, AISE-P502, AISE-P505) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC11, PROC13; ERC08a
**ES108:** Artists Supply and Hobby preparations (EM 47, EM 46) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC05; ERC08c
**ES109:** Automotive care products (EM 38, EM 39) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC11, PC06; ERC08a
**ES110:** Professional use of dishwash products (AISE-P203, AISE-P201, AISE-P202, AISE-P204) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC08a, PROC09, PROC10; ERC08a
**ES111:** Professional use of floor care products (AISE-P401, AISE-P403, AISE-P404, AISE-P405, AISE-P406, AISE-P407, AISE-P409, AISE-P410, AISE-P402, AISE-P408, AISE-P411) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PROC11; ERC08a
**ES112:** Professional use of general surface cleaning products (AISE-P301, AISE-P303, AISE-P305, AISE-P310, AISE-P312, AISE-P314, AISE-P316, AISE-P317, AISE-P302, AISE-P304, AISE-P306, AISE-P307, AISE-P308, AISE-P311, AISE-P313, AISE-P315, AISE-P309) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PROC11, PROC13; ERC08a
**ES113:** Professional use of laundry products (AISE-P102, AISE-P103, AISE-P105, AISE-P106, AISE-P111, AISE-P112, AISE-P113) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC08a, PROC11; ERC08a
**ES114:** Professional use of biocidal products (EM 108, EM 109) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC11, PC08; ERC08f
**ES115:** Lawn and garden preparations, including fertilizers (EM 55, EM 54) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC22; ERC08d
**ES116:** Professional use of maintenance products (AISE-P601, AISE-P603, AISE-P608, AISE-P602, AISE-P604, AISE-P609, AISE-P606, AISE-P607) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PROC11; ERC08a
**ES117:** Perfumes, fragrances (EM 79, EM 78) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC28; ERC08c
**ES118:** Plant protection products (EM 71, EM 70) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC27; ERC08c
**ES119:** Polishes and wax blends (EM 87, EM 86, EM 88) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC11, PC31; ERC08c

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**ES120:** Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents (EM 63) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC19, PC20; ERC08a
**ES121:** Water softeners (EM 94, EM 93) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC31; ERC08a
**ES122:** Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation (ETRMA 31) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC13; ERC06d
**ES123:** Skived cavities are filled with extruded rubber (ETRMA 24) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**ES124:** Spray application, wiping cement. (ETRMA 23) - Formulation or re-packing/Industrial: PROC07; ERC03
**ES125:** Textile application: calendering (EM 8) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC06, PC34; ERC05
**ES126:** Transferring cement into portable drums (ETRMA 8) - Formulation or re-packing/Industrial: PROC09; ERC03
**ES127:** Treatment with lubricant. Lubrifiant, improve flox during mechanical treatment (ETRMA 17) - Formulation or re-packing/Industrial: PROC10; ERC03
**ES128:** Treatment with releasing agents Applied on tyre (cold) (ETRMA 13) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07; ERC06d
**ES129:** Use as an intermediate or process chemical Includes recycling/recovery, material transfer, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container). (C9 acid) - Formulation or re-packing/Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15; ERC02, ERC03, ERC04
**ES130:** Use of the substance within laboratory settings, including material transfer and equipment cleaning. (C9 acid) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC15; ERC04
**ES131:** Use of the substance within laboratory settings, including material transfer and equipment cleaning. (C9 acid) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC15; ERC08a, ERC08b
**ES132:** Vulcanization of green cushion layer or green tyre and evacuation of cured article and fumes (ETRMA 27) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**ES133:** Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes) (ETRMA 16) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**ES134:** Wide dispersive indoor use of substances in closed systems (OL4) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07; ERC09a
**ES135:** Wide dispersive outdoor use of substances in closed systems (OL5) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08b; ERC09b
**ES136:** Application of non processing aids (TEGEWA 8, TEGEWA 9, TEGEWA 7) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC13, PROC17, PC24, PC34; ERC05
**ES137:** Application of processing aids (TEGEWA 4, TEGEWA 5) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC13, PROC17, PC24, PC34; ERC04
**ES138:** Blending (TEGEWA 1) - Formulation or re-packing/Industrial: PROC05, PC20, PC23, PC32; ERC02
**ES139:** Blending LEV (TEGEWA Leather 2) - Formulation or re-packing/Industrial: PROC05, PC20, PC23, PC32; ERC02
**ES140:** Handling (TEGEWA Leather 8, TEGEWA Leather 10, TEGEWA Leather 9, TEGEWA Leather 4, TEGEWA Leather 7, TEGEWA Leather 3, TEGEWA Leather 5, TEGEWA Leather 11, TEGEWA Leather 6) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC08b, PROC09, PC20, PC23, PC32; ERC04, ERC05, ERC06b
**ES141:** Use for leather finishing 1 (TEGEWA Leather 15) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PC23, P32; ERC04
**ES142:** Use for leather finishing 2 (TEGEWA Leather 16) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PC23, P32; ERC05
**ES143:** Use for leather finishing 3 (TEGEWA Leather 17) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PC23, P32; ERC04
**ES144:** Use for leather finishing 4 (TEGEWA Leather 18) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PC23, P32; ERC05
**ES145:** Use in wet end 2 (TEGEWA Leather 13) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC13, PC20, PC23; ERC05
**ES146:** Use in wet end 3 (TEGEWA Leather 14) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC13, PC20, PC23; ERC06b
**ES147:** Use in wet end 1 (TEGEWA Leather 12) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC13, PC20, PC23; ERC04
**ES148:** Use in adhesives (”FEICA-UseR 21-”1, “FEICA-UseR 21-”2, “FEICA-UseR 21-”3) - Consumer: PC01; ERC08c, ERC08f
**ES149:** Consumer solvent use, indoor ("FEICA-UseR 21-"14,"FEICA-UseR 21-"15) - Consumer: PC01; ERC08a
**ES150:** Consumer solvent use, outdoor ("FEICA-UseR 21-"17,"FEICA-UseR 21-"18) - Consumer: PC01; ERC08d
**ES151:** Consumer use in cleaning agents and maintenance products (incl. Air care products) (ECO 6) - Consumer: PC03, PC31, PC35; ERC08a
**ES152:** Cosmetic Products and Pharmaceuticals (ECO 8) - Consumer: PC28, PC29, PC39; ERC08a

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**ES153:** Consumer application of coatings or inks (CEPE AC0101, CEPE AC0102, CEPE AC0103, CEPE AC0104, CEPE AC0201, CEPE AC0202, CEPE AC0203, CEPE AC0204, CEPE AC0301 AC0401, CEPE AC0302 AC0402, CEPE AC0303 AC0403, CEPE AC0304 AC0404, CEPE AC0305 AC0405, CEPE AC0501, CEPE AC0601, CEPE AC0602, CEPE AC0603, CEPE AC0801, CEPE AC0802, CEPE AC0803) - Consumer: PC05; ERC08c
**ES154:** Perfumes, fragrances (EM 80) - Consumer: PC28; ERC08c
**ES155:** Consumer use of pest control products (AISE-C19) - Consumer: PC08; ERC08a
**ES156:** Plant protection products (EM 72) - Consumer: PC27; ERC08c
**ES157:** End use of cosmetic products (COLIPA U1) - Consumer: PC39; ERC08c
**ES158:** Sealants (”FEICA-UseR 21-”13) - Consumer: PC01; ERC08c
**ES159:** Service Life of Scented Articles (ECO 9) - Service life - Consumers: AC30, AC31, AC32, AC34, AC36; ERC11b

**Please do not print unless necessary, favor electronic consultation.**

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES001:** Adhesives, sealants; Manufacture (22, 23, 24, 25, 26, 27, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18, 19, 20, 21) - Formulation or re-packing/Industrial: PROC02, PROC03, PROC04, PROC05, PROC08b, PROC09, PROC10, PROC14; ERC02
**Process Category:** PROC02, PROC03, PROC04, PROC05, PROC08b, PROC09, PROC10, PROC14
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 001

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Contributing scenario controlling worker exposure for 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 4: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 8: Roller application or brushing**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 9: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.013714 mg/kg bw/day.<br>Risk characterisation ratio: 0.001371.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.275868. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.006857 mg/kg bw/day.<br>Risk characterisation ratio: 0.000686.<br><br>**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.<br>Risk characterisation ratio: 0.082349.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.083035. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.068571 mg/kg bw/day.
Risk characterisation ratio: 0.006857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.144106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.082339.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.068571 mg/kg bw/day.
Risk characterisation ratio: 0.006857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.144106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Roller application or brushing**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.<br>Risk characterisation ratio: 0.027429.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.301925. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 9: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.<br>Risk characterisation ratio: 0.003429.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.140677. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES002:** Adhesives, sealants; Professional use ("FEICA-UseR 22-"7, "FEICA-UseR 22-"8, "FEICA-UseR 22-"9, "FEICA-UseR 22-"10, "FEICA-UseR 22-"11, "FEICA-UseR 22-"12, "FEICA-UseR 22-"13, "FEICA-UseR 22-"14, "FEICA-UseR 22-"1, "FEICA-UseR 22-"2, "FEICA-UseR 22-"3, "FEICA-UseR 22-"4, "FEICA-UseR 22-"5, "FEICA-UseR 22-"6) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC08a, PROC10, PROC11; ERC08c, ERC08f
**Process Category:** PROC05, PROC08a, PROC10, PROC11
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c, ERC08f

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c
**Widespread use leading to inclusion into/onto article (outdoor) -** ERC08f

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11

**Number of the ES** : 002

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Widespread use leading to inclusion into/onto article (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day:1-4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Mixing or blending in batch processes**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Contributing scenario controlling worker exposure for 5: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Contributing scenario controlling worker exposure for 6: Non industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Widespread use leading to inclusion into/ onto article (outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 3: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.178412.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.42546.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.439174.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.214286 mg/kg bw/day.
Risk characterisation ratio: 0.021429.

**Worker - inhalative, long-term - systemic:** 5.808 mg/m³.
Risk characterisation ratio: 0.329396.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.350825.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES003:** Adhesives, sealants (”FEICA-UseR 3-”23, “FEICA-UseR 3-”24, “FEICA-UseR 3-”25, “FEICA-UseR 3-”26,“FEICA-UseR 3-”27, “FEICA-UseR 3-”31, “FEICA-UseR 3-”32, “FEICA-UseR 3-”33, “FEICA-UseR 3-”34, “FEICA-UseR 3-”1, “FEICA-UseR 3-”2, “FEICA-UseR 3-”3, “FEICA-UseR 3-”4, “FEICA-UseR 3-”5, “FEICA-UseR 3-”6, “FEICA-UseR 3-”7, “FEICA-UseR 3-”8, “FEICA-UseR 3-”9, “FEICA-UseR 3-”10, “FEICA-UseR 3-”14, “FEICA-UseR 3-”15, “FEICA-UseR 3-”16, “FEICA-UseR 3-”17, “FEICA-UseR 3-”18, “FEICA-UseR 3-”19) - Industrial/ Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC04, PROC05, PROC07, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC14; ERC05
**Process Category:** PROC02, PROC04, PROC05, PROC07, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 003

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Contributing scenario controlling worker exposure for 3: Chemical production where opportunity for exposure arises**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Industrial spraying**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 8: Roller application or brushing**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 9: Non industrial spraying**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 10: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 11: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/ onto article**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.013714 mg/kg bw/day.<br>Risk characterisation ratio: 0.001371.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.275868. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.068571 mg/kg bw/day.<br>Risk characterisation ratio: 0.006857.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.144106. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.180106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.082339.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.068571 mg/kg bw/day.
Risk characterisation ratio: 0.006857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.144106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.301925.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.071 mg/kg bw/day.
Risk characterisation ratio: 0.107143.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.656137.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.288211.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.140677.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES004:** Automatic substance metering, feeding into mixing unit Solids Ex. CB, Si (ETRMA 2) - Formulation or re-packing/Industrial: PROC08b; ERC03
**Process Category:** PROC08b
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b

**Number of the ES** : 004

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES005:** Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils (ETRMA 3) - Formulation or re-packing/Industrial: PROC08b; ERC03
**Process Category:** PROC08b
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b

**Number of the ES** : 005

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES006:** Balance grinding and trimming (ETRMA 19) - Formulation or re-packing/Industrial: PROC21; ERC03
**Process Category:** PROC21
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Low energy manipulation and handling of substances bound in/on materials or articles -** PROC21

**Number of the ES** : 006

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Product characteristics** : Solid, medium dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Low energy manipulation and handling of substances bound in/on materials or articles**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.<br>Risk characterisation ratio: 0.282857.<br><br>**Worker - inhalative, long-term - systemic:** 3 mg/m³.<br>Risk characterisation ratio: 0.170145.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.453002. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Various products (PC24, PC34)

**List of use descriptors** : **Identified use name: ES007:** Blending (TEGEWA 1) - Formulation or re-packing/ Industrial: PROC05, PC24, PC34; ERC02
**Process Category:** PROC05
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC24, PC34

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05

**Number of the ES** : 007

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES008:** Casings are selected and cleaned (ETRMA 21) - Formulation or re-packing/Industrial: PROC21; ERC03
**Process Category:** PROC21
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Low energy manipulation and handling of substances bound in/on materials or articles -** PROC21

**Number of the ES** : 008

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Product characteristics** : Solid, medium dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Low energy manipulation and handling of substances bound in/on materials or articles**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.<br>Risk characterisation ratio: 0.282857.<br><br>**Worker - inhalative, long-term - systemic:** 3 mg/m³.<br>Risk characterisation ratio: 0.170145.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.453002. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES009:** Cement and paint application (ETRMA 9) - Formulation or re-packing/Industrial: PROC10; ERC03
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 009

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.<br>Risk characterisation ratio: 0.027429.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.164677. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES010:** Cement application (ETRMA 12, ETRMA 18) - Formulation or re-packing/Industrial: PROC10; ERC03
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 010

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.<br>Risk characterisation ratio: 0.027429.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.164677. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES011:** Compound assembling from stocks (ETRMA 15) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC21; ERC06d
**Process Category:** PROC21
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Low energy manipulation and handling of substances bound in/on materials or articles -** PROC21

**Number of the ES** : 011

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Product characteristics** : Solid, medium dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Low energy manipulation and handling of substances bound in/on materials or articles**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.<br>Risk characterisation ratio: 0.282857.<br><br>**Worker - inhalative, long-term - systemic:** 3 mg/m³.<br>Risk characterisation ratio: 0.170145.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.453002. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES012:** Compound processing; Cooling extruded compound (ETRMA 10) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**Process Category:** PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 012

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES013:** Compound transfer into a vessel, mixing and transfering cement into portable drums (ETRMA 7) - Formulation or re-packing/ Industrial: PROC09; ERC03
**Process Category:** PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 013

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents (PC20)

**List of use descriptors** : **Identified use name: ES014:** Consumer use of products such as pH-regulators, flocculants, precipitants etc (EM 64) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PC20; ERC08d
**Process Category:** PROC05
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08d
**Market sector by type of chemical product:** PC20

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) -** ERC08d

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05

**Number of the ES** : 014

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

PC20

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day:>4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 014 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents (PC20)*** |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES015:** Covers the direct use of the substance by converters including pouring/unloading from drums, bags or containers; and exposures during the processing step and cleaning/maintenance activities, Covers the use as a component in order to further transform them into articles (Croda 4, Croda 5) - Formulation or re-packing/Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC06, PROC08a, PROC08b, PROC09, PROC10, PROC12, PROC13, PROC14; ERC03, ERC05
**Process Category:** PROC05, PROC06, PROC08a, PROC08b, PROC09, PROC10, PROC12, PROC13, PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03, ERC05

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03
**Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Calendering operations -** PROC06
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10
**Use of blowing agents in manufacture of foam -** PROC12
**Treatment of articles by dipping and pouring -** PROC13
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 015

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 3: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Calendering operations**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 8: Roller application or brushing**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 9: Use of blowing agents in manufacture of foam**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 10: Treatment of articles by dipping and pouring**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 11: Tabletting, compression, extrusion, pelletisation, granulation**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 3: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**

Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Calendering operations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 5.486 mg/kg bw/day.
Risk characterisation ratio: 0.548571.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.68582.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 5.486 mg/kg bw/day.
Risk characterisation ratio: 0.548571.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.823068.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Use of blowing agents in manufacture of foam**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.58328.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES016:** Covers the use as a component in order to further transform them into articles (Croda 6a, Croda 6b, Croda 9a, Croda 9b, Croda 12a, Croda 12b, Croda 15a, Croda 15b, Croda 18a, Croda 18b) - Formulation or re-packing/Industrial: PROC21, PROC24; ERC03
**Process Category:** PROC21, PROC24
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Low energy manipulation and handling of substances bound in/on materials or articles -** PROC21
**High (mechanical) energy work-up of substances bound in/on materials and/or articles -** PROC24

**Number of the ES** : 016

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Product characteristics** : Solid, medium dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 3: High (mechanical) energy work-up of substances bound in/on materials and/or articles**

**Product characteristics** : Solid, low dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.
Risk characterisation ratio: 0.282857.

**Worker - inhalative, long-term - systemic:** 3 mg/m³.
Risk characterisation ratio: 0.170145.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.453002.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: High (mechanical) energy work-up of substances bound in/on materials and/or articles**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.
Risk characterisation ratio: 0.282857.

**Worker - inhalative, long-term - systemic:** 1 mg/m³.
Risk characterisation ratio: 0.056715.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.339572.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES017:** Covers the use as a component of cleaning and maintenance products including material transfer and preparation. Exposures during cleaning activities (including spraying, brushing, dipping, wiping automated and by hand), hand-mixing and associated laboratory activities. (C9 acid) (ECO 4, ECO 5) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC04, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19; ERC08a
**Process Category:** PROC01, PROC02, PROC04, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Chemical production where opportunity for exposure arises -** PROC04
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13
**Use as laboratory reagent -** PROC15
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 017

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Contributing scenario controlling worker exposure for 4: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Industrial:<br>Exposure duration per day: >4 hours.<br>Frequency: 5 days per week.<br><br>Professional:<br>Exposure duration per day: 1-4 hours.<br>Frequency 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Industrial:<br>Exposure duration per day: >4 hours.<br>Frequency: 5 days per week.<br><br>Professional:<br>Exposure duration per day: 1-4 hours.<br>Frequency 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Industrial:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Professional:<br>Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 7: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Industrial:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 90%.<br><br>Professional:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 8: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 9: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Industrial:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 90%.<br><br>Professional:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 10: Use as laboratory reagent**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |

**Contributing scenario controlling worker exposure for 11: Manual activities involving hand contact**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 25%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1980 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.<br>Risk characterisation ratio: 0.003429.<br><br>**Worker - inhalative, long-term - systemic:** 0.048399 mg/m³.<br>Risk characterisation ratio: 0.002745.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.006174. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | Industrial:<br>**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 0.967986 mg/m³.<br>Risk characterisation ratio: 0.054899.<br><br>**Worker - combined, long-term - systemic:** |

Risk characterisation ratio: 0.192042.

Professional:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Industrial:
**Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

Professional:
**Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.850412.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Industrial:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

Professional:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**

Risk characterisation ratio: 0.686031.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Industrial:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

Professional:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Industrial:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 0.241996 mg/m³.
Risk characterisation ratio: 0.013725.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150868.

Professional:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.205767.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.09541.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Industrial:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

Professional:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686137.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.308783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.836031

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES018:** Covers the use as a component of cleaning and maintenance products including material transfer and preparation. Exposures during cleaning activities (including spraying, brushing, dipping, wiping automated and by hand), lubrication at high energy conditions, high energy work-up and related equipment cleaning and maintenance and associated laboratory activities. (C9 acid) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC04, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15, PROC17; ERC04, ERC05, ERC06b, ERC08a
**Process Category:** PROC02, PROC04, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15, PROC17
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05, ERC06b, ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a
**Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05
**Use of reactive processing aid at industrial site (no inclusion into or onto article) -** ERC06b

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Chemical production where opportunity for exposure arises -** PROC04
**Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13
**Use as laboratory reagent -** PROC15
**Lubrication at high energy conditions in metal working operations -** PROC17

**Number of the ES** : 018

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 4: Use of reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Contributing scenario controlling worker exposure for 5: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Contributing scenario controlling worker exposure for 6: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 7: Industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 20%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 9: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 10: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 11: Treatment of articles by dipping and pouring**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 12: Use as laboratory reagent**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 13: Lubrication at high energy conditions in metal working operations**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 3: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 4: Use of reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 5: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.714 mg/kg bw/day.
Risk characterisation ratio: 0.171429.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.445925.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 0.241996 mg/m³.
Risk characterisation ratio: 0.013725.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150868.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 12: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.171534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 13: Lubrication at high energy conditions in metal working operations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686137.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers

**List of use descriptors** : **Identified use name: ES019:** Covers the use as a component of lubricant in an open system including exposures during use due to application by dipping, brushing or spraying. - Professional: ERC08a, ERC08d
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a, ERC08d

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a
**Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) -** ERC08d

**Health Contributing scenarios** :

**Number of the ES** : 019

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 3:**

Not applicable.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 3:**

**Exposure assessment (human):** : Not applicable.

**Exposure estimation** : Not applicable.

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES020:** Covers the use in compounders plants, including exposures during use (including materials transfer from bulk and semi-bulk and other manual application tasks) and equipment cleaning (Croda 2) - Formulation or re-packing/Industrial: PROC14; ERC03
**Process Category:** PROC14
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 020

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.<br>Risk characterisation ratio: 0.342857.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.480106. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES021:** Covers the use in lubricants including exposures during use (including material transfer or preparation, application by dipping, brushing or spraying) and draining, maintenance, cleaning of equipment. (C9 acid) - Industrial/ Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PROC11, PROC13; ERC08a
**Process Category:** PROC08a, PROC10, PROC11, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 021

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Professional use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 4: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 5: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686031.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.205767.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.09541.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES022:** Covers the use in lubricants including exposures during use (including material transfer, mixing/blending, application by dipping, brushing or spraying, ) and draining, maintenance, cleaning of equipment. (C9 acid) - Formulation or re-packing/Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC07, PROC08b, PROC09, PROC10, PROC13; ERC02, ERC04
**Process Category:** PROC05, PROC07, PROC08b, PROC09, PROC10, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02, ERC04

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02
**Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 022

## Section 2 - Exposure controls

### Contributing scenario controlling environmental exposure for 1: Formulation into mixture

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling environmental exposure for 2: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling worker exposure for: All Contributing scenarios

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 3: Mixing or blending in batch processes**

**Product characteristics** : Covers percentage substance in the product up to 100%

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 20%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Covers percentage substance in the product up to 100%

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 7: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 8: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100% |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 3: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Industrial spraying**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.714 mg/kg bw/day.<br>Risk characterisation ratio: 0.171429.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.445925. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 0.241996 mg/m³.
Risk characterisation ratio: 0.013725.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150868.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES023:** Covers the use in masterbatch producers plants, including exposures during use (including materials transfer from bulk and semi-bulk and other manual application tasks) and equipment cleaning (Croda 3a, Croda 3b) - Formulation or re-packing/Industrial: PROC21, PROC24; ERC03
**Process Category:** PROC21, PROC24
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Low energy manipulation and handling of substances bound in/on materials or articles -** PROC21
**High (mechanical) energy work-up of substances bound in/on materials and/or articles -** PROC24

**Number of the ES** : 023

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Product characteristics** : Solid, medium dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 3: High (mechanical) energy work-up of substances bound in/on materials and/or articles**

**Product characteristics** : Solid, low dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.
Risk characterisation ratio: 0.282857.

**Worker - inhalative, long-term - systemic:** 3 mg/m³.
Risk characterisation ratio: 0.170145.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.453002.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: High (mechanical) energy work-up of substances bound in/on materials and/or articles**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.
Risk characterisation ratio: 0.282857.

**Worker - inhalative, long-term - systemic:** 1 mg/m³.
Risk characterisation ratio: 0.056715.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.339572.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES024:** Covers the use in polymers production plants, including exposures during use (including materials transfer from bulk and semi-bulk and other manual application tasks) and equipment cleaning (Croda 1) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09; ERC03
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 024

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES025:** Covers the use of a plastic, compound or masterbatch in calendering applications including transfer from storage; pouring/unloading from drums, bags or containers; exposures during moulding and cleaning activities (automated and by hand) and related maintenance; Covers the use as a component in order to further transform them into articles (Croda 13, Croda 14) - Formulation or re-packing/Industrial: PROC05, PROC06, PROC08a, PROC08b, PROC09, PROC12, PROC14; ERC03
**Process Category:** PROC05, PROC06, PROC08a, PROC08b, PROC09, PROC12, PROC14
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Calendering operations -** PROC06
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Use of blowing agents in manufacture of foam -** PROC12
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 025

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Calendering operations**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 7: Use of blowing agents in manufacture of foam**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 8: Tabletting, compression, extrusion, pelletisation, granulation**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Calendering operations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 5.486 mg/kg bw/day.
Risk characterisation ratio: 0.548571.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.68582.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Use of blowing agents in manufacture of foam**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.58328.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES026:** Covers the use of a plastic, compound or masterbatch in extrusion applications including transfer from storage; pouring/unloading from drums, bags or containers; exposures during moulding and cleaning activities (automated and by hand) and related maintenance; Covers the use as a component in order to further transform them into articles (Croda 7, Croda 8) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PROC12, PROC14; ERC03
**Process Category:** PROC05, PROC08a, PROC08b, PROC09, PROC12, PROC14
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Use of blowing agents in manufacture of foam -** PROC12
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 026

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Use of blowing agents in manufacture of foam**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 7: Tabletting, compression, extrusion, pelletisation, granulation**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Use of blowing agents in manufacture of foam**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.58328.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES027:** Covers the use of a plastic, compound or masterbatch in injection moulding, blow moulding, rotational moulding applications including transfer from storage; pouring/unloading from drums, bags or containers; exposures during moulding and cleaning activities (automated and by hand) and related maintenance; Covers the use as a component in order to further transform them into articles (Croda 10, Croda 11) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PROC12, PROC14; ERC02, ERC03
**Process Category:** PROC05, PROC08a, PROC08b, PROC09, PROC12, PROC14
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02, ERC03

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02
**Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Use of blowing agents in manufacture of foam -** PROC12
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 027

## Section 2 - Exposure controls

### Contributing scenario controlling environmental exposure for 1: Formulation into mixture

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling environmental exposure for 2: Formulation into solid matrix

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling worker exposure for: All Contributing scenarios

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 3: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 7: Use of blowing agents in manufacture of foam**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 8: Tabletting, compression, extrusion, pelletisation, granulation**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 3: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Use of blowing agents in manufacture of foam**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.58328.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES028:** Covers the use of a plastic, compound or masterbatch in spread coating or dip coating applications including transfer from storage; pouring/ unloading from drums, bags or containers; exposures during enduction or dip coating and cleaning activities (automated and by hand); and related maintenance; Covers the use as a component in order to further transform them into articles (Croda 16, Croda 17) - Formulation or re-packing/Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC08a, PROC08b, PROC09, PROC10, PROC12, PROC13; ERC03, ERC05
**Process Category:** PROC05, PROC08a, PROC08b, PROC09, PROC10, PROC12, PROC13
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03, ERC05

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03
**Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10
**Use of blowing agents in manufacture of foam -** PROC12
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 028

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 3: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 7: Roller application or brushing**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 8: Use of blowing agents in manufacture of foam**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 9: Treatment of articles by dipping and pouring**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 3: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 5.486 mg/kg bw/day.
Risk characterisation ratio: 0.548571.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.823068.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Use of blowing agents in manufacture of foam**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.58328.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.548783. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES029:** Cutting, trimming, regrooving, abrading (ETRMA 29) - Formulation or re-packing/Industrial: PROC21; ERC03
**Process Category:** PROC21
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Low energy manipulation and handling of substances bound in/on materials or articles -** PROC21

**Number of the ES** : 029

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Product characteristics** : Solid, medium dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Low energy manipulation and handling of substances bound in/on materials or articles**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.<br>Risk characterisation ratio: 0.282857.<br><br>**Worker - inhalative, long-term - systemic:** 3 mg/m³.<br>Risk characterisation ratio: 0.170145.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.453002. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES030:** Direct extrusion on the prepared casings of cushion gum layer (ETRMA 26) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**Process Category:** PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 030

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES031:** Drying and/or solvents evaporation (ETRMA 30) - Formulation or re-packing/Industrial: PROC10; ERC03
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 031

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.<br>Risk characterisation ratio: 0.027429.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.164677. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES032:** Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm) (ETRMA 14) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07; ERC06d
**Process Category:** PROC07
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Industrial spraying -** PROC07

**Number of the ES** : 032

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Industrial spraying**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 20%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES033:** Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans (ETRMA 6) - Formulation or re-packing/Industrial: PROC09; ERC03
**Process Category:** PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 033

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC32, PC34)

**List of use descriptors** : **Identified use name: ES034:** Extrusion (EM 7) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14, PC32, PC34; ERC06c
**Process Category:** PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06c
**Market sector by type of chemical product:** PC32, PC34

**Environmental contributing scenarios** : **Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06c

**Health Contributing scenarios** : **Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 034

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Tabletting, compression, extrusion, pelletisation, granulation**

PC32, PC34

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES035:** Feeding from stock, milling, and feeding the calender (ETRMA 11) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**Process Category:** PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 035

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

| | | |
|---|---|---|
| **Product definition** | : | Mono-constituent substance |
| **Product name** | : | hexanoic acid |

## Section 1 - Title

| | | |
|---|---|---|
| **Short title of the exposure scenario** | : | Industrial use |
| **List of use descriptors** | : | **Identified use name: ES036:** Food industry (TNO) - Industrial: ERC02<br>**Subsequent service life relevant for that use:** No.<br>**Environmental Release Category:** ERC02 |
| **Environmental contributing scenarios** | : | **Formulation into mixture -** ERC02 |
| **Health Contributing scenarios** | : | |
| **Number of the ES** | : | 036 |

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2:**

Not applicable.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2:**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | Not applicable. |
| **Exposure estimation** | : | Not applicable. |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES037:** Formulation & (re)packing of substances and mixtures in batch or continuous operations, including storage, materials transfers, mixing, large and small scale packing, maintenance and associated laboratory activities. (C9 acid) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15; ERC02
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14
**Use as laboratory reagent -** PROC15

**Number of the ES** : 037

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 5: Chemical production where opportunity for exposure arises**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Mixing or blending in batch processes**

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 10: Tabletting, compression, extrusion, pelletisation, granulation**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 11: Use as laboratory reagent**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.02904 mg/m³.
Risk characterisation ratio: 0.001647.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.005076.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.301841.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 8.712 mg/m³.
Risk characterisation ratio: 0.494094.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.562666.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.768063.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.356635.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.768063.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.425206.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.116635.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES038:** Formulation of Construction Chemicals, closed systems (CC-2) - Formulation or re-packing/ Professional: PROC03, PROC08b, PROC09; ERC02
**Process Category:** PROC03, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 038

## Section 2 - Exposure controls

### Contributing scenario controlling environmental exposure for 1: Formulation into mixture

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling worker exposure for: All Contributing scenarios

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

### Contributing scenario controlling worker exposure for 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 8.712 mg/m³.
Risk characterisation ratio: 0.494094.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.562666.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.<br>Risk characterisation ratio: 0.164698.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.301841. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES039:** Formulation of Construction Chemicals, open systems (CC-1-1) - Formulation or re-packing/ Professional: PROC05, PROC08b, PROC09; ERC02
**Process Category:** PROC05, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 039

## Section 2 - Exposure controls

### Contributing scenario controlling environmental exposure for 1: Formulation into mixture

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling worker exposure for: All Contributing scenarios

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Other conditions affecting workers exposure** : Indoor use.

### Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 80%.

### Conditions and measures related to personal protection, hygiene and health evaluation

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686137.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.<br>Risk characterisation ratio: 0.164698.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.301841. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES040:** Formulation of Construction Chemicals, open systems without local exhaust ventilation (CC-1-2) - Formulation or re-packing/ Professional: PROC05, PROC08b, PROC09; ERC02
**Process Category:** PROC05, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 040

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.<br>Risk characterisation ratio: 0.164698.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.301841. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES041:** Formulation of Construction Chemicals, closed systems (CC-2) - Formulation or re-packing/ Professional: PROC03, PROC08b; ERC02
**Process Category:** PROC03, PROC08b
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b

**Number of the ES** : 041

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 8.712 mg/m³.
Risk characterisation ratio: 0.494094.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.562666.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES042:** Formulation of Pharmaceutical products (OL8) - Formulation or re-packing/Industrial: PROC05; ERC02
**Process Category:** PROC05
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05

**Number of the ES** : 042

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES043:** Formulation of washing and cleaning products (OL7) - Formulation or re-packing/Industrial: PROC05; ERC02
**Process Category:** PROC05
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05

**Number of the ES** : 043

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC24, PC34)

**List of use descriptors** : **Identified use name: ES044:** Handling (TEGEWA 2, TEGEWA 6) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08b, PC24, PC34; ERC04, ERC05
**Process Category:** PROC08b
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05
**Market sector by type of chemical product:** PC24, PC34

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b

**Number of the ES** : 044

## Section 2 - Exposure controls

### Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES045:** Solvent use (Processing aid) (”FEICA-UseR 3-”40, “FEICA-UseR 3-”41, “FEICA-UseR 3-”35, “FEICA-UseR 3-”36, “FEICA-UseR 3-”37, “FEICA-UseR 3-”38, “FEICA-UseR 3-”39) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC03, PROC07, PROC08a, PROC08b, PROC10, PROC13; ERC04
**Process Category:** PROC02, PROC03, PROC07, PROC08a, PROC08b, PROC10, PROC13
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 045

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Contributing scenario controlling worker exposure for 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Contributing scenario controlling worker exposure for 4: Industrial spraying**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Contributing scenario controlling worker exposure for 7: Roller application or brushing**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Contributing scenario controlling worker exposure for 8: Treatment of articles by dipping and pouring**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.013714 mg/kg bw/day.
Risk characterisation ratio: 0.001371.

**Worker - inhalative, long-term - systemic:** 0.483993 mg/m³.
Risk characterisation ratio: 0.02745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.028821.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.006857 mg/kg bw/day.
Risk characterisation ratio: 0.000686.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.083035.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.180106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.288211.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.082339.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.301925.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.288211.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)

**List of use descriptors** : **Identified use name: ES046:** Industrial use of façade/surface cleaning products (AISE-P907, AISE-P906) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC08a, PROC11, PC35; ERC04
**Process Category:** PROC07, PROC08a, PROC11
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC35

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Non industrial spraying -** PROC11

**Number of the ES** : 046

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Industrial spraying**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 20%.

**Frequency and duration of use/exposure** : Exposure duration per day: 480 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Outdoor use.
Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 10 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use.<br>Industrial use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 4: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 480 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use.<br>Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Industrial spraying**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.714 mg/kg bw/day.<br>Risk characterisation ratio: 0.171429.<br><br>**Worker - inhalative, long-term - systemic:** 3.388 mg/m³.<br>Risk characterisation ratio: 0.192148.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.363576. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.057143 mg/kg bw/day.
Risk characterisation ratio: 0.005714.

**Worker - inhalative, long-term - systemic:** 0.705823 mg/m³.
Risk characterisation ratio: 0.040031.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.045745.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.12286.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)

**List of use descriptors** : **Identified use name: ES047:** Industrial use of vehicle cleaning products (AISE-P713, AISE-P710, AISE-P711, AISE-P714, AISE-P709, AISE-P712) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC04, PROC08a, PROC10, PROC11, PC35; ERC04
**Process Category:** PROC04, PROC08a, PROC10, PROC11
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC35

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Chemical production where opportunity for exposure arises -** PROC04
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11

**Number of the ES** : 047

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Chemical production where opportunity for exposure arises**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 480 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use/Outdoor use.
Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 30 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use.<br>Industrial use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 4: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 480 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use.<br>Industrial use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 5: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 480 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use.<br>Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.274391.

Outdoor use:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.233217.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 0.171429 mg/kg bw/day.
Risk characterisation ratio: 0.017143.

**Worker - inhalative, long-term - systemic:** 3.025 mg/m³.
Risk characterisation ratio: 0.171561.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.188703.

Outdoor use:
**Worker - dermal, long-term - systemic:** 0.171429 mg/kg bw/day.
Risk characterisation ratio: 0.017143.

**Worker - inhalative, long-term - systemic:** 2.117 mg/m³.
Risk characterisation ratio: 0.120092.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.137235.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.123502.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

Outdoor use:
**Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.12286.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC09a, PC09b, PC09c, PC18)

**List of use descriptors** : **Identified use name: ES048:** Industrial application of coatings and inks (PC 9a, 9b, 9c, 18) (CEPE AI0101, CEPE AI0102, CEPE AI0201, CEPE AI0202, CEPE AI0301, CEPE AI0302, CEPE AI0303, CEPE AI0309, CEPE AI0310, CEPE AI0311, CEPE AI0103, CEPE AI0104, CEPE AI0203, CEPE AI0204, CEPE AI0502, CEPE AI0503 CEPE AI0504, CEPE AI0505 CEPE AI0506, CEPE AI0002, CEPE AI0003, CEPE AI0004, CEPE AI0601 CEPE AI0607 CEPE AI0613, CEPE AI0602 CEPE AI0608 CEPE AI0614, CEPE AI1001, CEPE AI0501, CEPE AI0105, CEPE AI0106, CEPE AI0107, CEPE AI0603 CEPE AI0609 CEPE AI0615, CEPE AI0604 CEPE AI0610, CEPE AI0605 CEPE AI0611 CEPE AI0616, CEPE AI0606 CEPE AI0612 CEPE AI0617, CEPE AI0901, CEPE AI0304, CEPE AI0305, CEPE AI0306, CEPE AI0307, CEPE AI0308, CEPE AI0312, CEPE AI0207, CEPE AI0001, CEPE AI0108, CEPE AI0110, CEPE AI0205, CEPE AI0206, CEPE AI0208, CEPE AI0209, CEPE AI1002) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PC09a, PC09b, PC09c, PC18; ERC04, ERC05
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05
**Market sector by type of chemical product:** PC09a, PC09b, PC09c, PC18

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 048

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Contributing scenario controlling worker exposure for 4: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 5: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Indoor use:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 7: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Indoor use:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Outdoor use:<br>Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 8: Industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 20%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 9: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 10: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Indoor use:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Outdoor use:<br>Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 11: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 12: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.048399 mg/m³.
Risk characterisation ratio: 0.002745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.006174.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 0.483993 mg/m³.
Risk characterisation ratio: 0.02745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.054878.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

Outdoor use:
**Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 10.164 mg/m³.
Risk characterisation ratio: 0.576443.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.645015.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

Outdoor use:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37036.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 3.388 mg/m³.
Risk characterisation ratio: 0.192148.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.466434.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

Outdoor use:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37036.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 0.241996 mg/m³.
Risk characterisation ratio: 0.013725.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.041153.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 12: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES049:** Industrial finishing processes for textiles, films, fabrics (OL1) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC06; ERC05, ERC06a, ERC06c
**Process Category:** PROC06
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05, ERC06a, ERC06c

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05
**Use of intermediate -** ERC06a
**Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06c

**Health Contributing scenarios** : **Calendering operations -** PROC06

**Number of the ES** : 049

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use of intermediate**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 4: Calendering operations**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Use of intermediate**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 3: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 4: Calendering operations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 5.486 mg/kg bw/day.
Risk characterisation ratio: 0.548571.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.68582.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Various products (PC09a, PC09b, PC09c, PC18)

**List of use descriptors** : **Identified use name: ES050:** Industrial manufacture of coatings and inks (PC9a, 9b, 9c, 18) (CEPE MS0021 MW0021, CEPE MS0022 MW0022, CEPE MS0023 MW0023, CEPE MS0024 MW0024, CEPE MS0032 MW0032, CEPE MS0051 MW0051, CEPE MS0052 MW0052, CEPE MS0013 MW0013, CEPE MS0013 MW0013, CEPE MS0014 MW0014, CEPE MS0014 MW0014, CEPE MS0015 MW0015, CEPE MS0033 MW0033, CEPE MS0071 MW0071, CEPE MS0072 MW0072, CEPE MS0034 MW0034, CEPE MS0035 MW0035, CEPE MS0053 MW0053, CEPE MS0054 MW0054, CEPE MS0111 MW0111, CEPE MS0112 MW0112, CEPE MS0043 MW0043, CEPE MS0044 MW0044, CEPE MS0011 MW0011, CEPE MS0011 MW0011, CEPE MS0012 MW0012, CEPE MS0012 MW0012, CEPE MS0025 MW0025, CEPE MS0026 MW0026, CEPE MS0027 MW0027, CEPE MS0028 MW0028, CEPE MS0070 MW0070, CEPE MS0073 MW0073, CEPE MS0091 MW0091, CEPE MS0092 MW0092, CEPE MS0041 MW0041, CEPE MS0042 MW0042) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09, PC09a, PC09b, PC09c, PC18; ERC02
**Process Category:** PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC09a, PC09b, PC09c, PC18

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 050

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use. |

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Indoor use:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 90%.<br>*or*<br>Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 5: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Indoor use:<br>Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Outdoor use:<br>Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.048399 mg/m³.
Risk characterisation ratio: 0.002745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.006174.

Outdoor use:
**Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.03388 mg/m³.
Risk characterisation ratio: 0.001921.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.00535.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 0.483993 mg/m³.
Risk characterisation ratio: 0.02745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.054878.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.096063.

Outdoor use:
**Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 10.164 mg/m³.
Risk characterisation ratio: 0.576443.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.590158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

Outdoor use:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37036.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.274391. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES051:** Industrial use of Construction Chemicals, Service life: indoor (CC-3-1) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC08b, PROC10, PROC13, PROC14; ERC04, ERC05, ERC11a
**Process Category:** PROC07, PROC08b, PROC10, PROC13, PROC14
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05, ERC11a

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05
**Widespread use of articles with low release (indoor) -** ERC11a

**Health Contributing scenarios** : **Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 051

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Widespread use of articles with low release (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 4: Industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 20%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 7: Treatment of articles by dipping and pouring**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 8: Tabletting, compression, extrusion, pelletisation, granulation**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 3: Widespread use of articles with low release (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 4: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.714 mg/kg bw/day.
Risk characterisation ratio: 0.171429.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.445925.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.356635.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164677.

| | | |
|---|---|---|
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 7: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.<br>Risk characterisation ratio: 0.013714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.150963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 8: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.<br>Risk characterisation ratio: 0.068571.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.20582. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES052:** Industrial use of Construction Chemicals, Service life: outdoor (CC-4-1) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC08b, PROC10, PROC13, PROC14; ERC04, ERC05, ERC10a
**Process Category:** PROC07, PROC08b, PROC10, PROC13, PROC14
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05, ERC10a

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05
**Widespread use of articles with low release (outdoor) -** ERC10a

**Health Contributing scenarios** : **Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 052

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Widespread use of articles with low release (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 4: Industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 20%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 7: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 8: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 3: Widespread use of articles with low release (outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 4: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.356635.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164677.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.20582.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES053:** Industrial use of Construction Chemicals, without spraying, Service life: outdoor (CC-4-2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08b, PROC10, PROC13, PROC14; ERC04, ERC05, ERC10a
**Process Category:** PROC08b, PROC10, PROC13, PROC14
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05, ERC10a

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05
**Widespread use of articles with low release (outdoor) -** ERC10a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 053

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Widespread use of articles with low release (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 6: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 7: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 3: Widespread use of articles with low release (outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.356635.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164677.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.20582.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES054:** Industrial use of Construction Chemicals, without spraying, Service life: indoor (CC-3-2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08b, PROC10, PROC13, PROC14; ERC04, ERC05, ERC11a
**Process Category:** PROC08b, PROC10, PROC13, PROC14
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05, ERC11a

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05
**Widespread use of articles with low release (indoor) -** ERC11a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 054

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Widespread use of articles with low release (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 6: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 7: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 3: Widespread use of articles with low release (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.356635.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164677.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.20582.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)

**List of use descriptors** : **Identified use name: ES055:** Industrial use of Food beverage and pharmacos products (AISE-P809, AISE-P806, AISE-P804, AISE-P807, AISE-P803, AISE-P810, AISE-P801, AISE-P802, AISE-P805, AISE-P811) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC04, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PC35; ERC04
**Process Category:** PROC01, PROC04, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC35

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production where opportunity for exposure arises -** PROC04
**Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 055

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |

**Contributing scenario controlling worker exposure for 3: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 480 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 4: Industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 20%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 480 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 5 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 5 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Contributing scenario controlling worker exposure for 9: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: 240 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 10: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 60 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 11: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 30 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 12: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 480 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.00968 mg/m³.
Risk characterisation ratio: 0.000549.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.003978.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.028571 mg/kg bw/day.
Risk characterisation ratio: 0.002857.

**Worker - inhalative, long-term - systemic:** 0.050416 mg/m³.
Risk characterisation ratio: 0.002859.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.005716.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.028571 mg/kg bw/day.
Risk characterisation ratio: 0.002857.

**Worker - inhalative, long-term - systemic:** 0.25208 mg/m³.
Risk characterisation ratio: 0.014297.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.017154.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**

Risk characterisation ratio: 0.082339.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.133929 mg/kg bw/day.
Risk characterisation ratio: 0.013393.

**Worker - inhalative, long-term - systemic:** 0.604991 mg/m³.
Risk characterisation ratio: 0.034312.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.047705.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.016741 mg/kg bw/day.
Risk characterisation ratio: 0.001674.

**Worker - inhalative, long-term - systemic:** 1.512 mg/m³.
Risk characterisation ratio: 0.08578.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.087454.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 12: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)

**List of use descriptors** : **Identified use name: ES056:** Industrial use of laundry products (AISE-P108, AISE-P109, AISE-P101, AISE-P104, AISE-P107, AISE-P110) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC08a, PROC08b, PROC09, PC35; ERC04, ERC6b, ERC08a
**Process Category:** PROC01, PROC02, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC06b, ERC08a
**Market sector by type of chemical product:** PC35

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use of reactive processing aid at industrial site (no inclusion into or onto article) -** ERC06b
**Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 056

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use of reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Contributing scenario controlling worker exposure for 4: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: <15 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |

**Contributing scenario controlling worker exposure for 5: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 5 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Use of reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 3: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 4: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.<br>Risk characterisation ratio: 0.003429.<br><br>**Worker - inhalative, long-term - systemic:** 0.00484 mg/m³.<br>Risk characterisation ratio: 0.000274.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.003703. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.014286 mg/kg bw/day.
Risk characterisation ratio: 0.001429.

**Worker - inhalative, long-term - systemic:** 0.050416 mg/m³.
Risk characterisation ratio: 0.002859.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.004288.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.085714 mg/kg bw/day.
Risk characterisation ratio: 0.008571.

**Worker - inhalative, long-term - systemic:** 0.756239 mg/m³.
Risk characterisation ratio: 0.04289.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.051462.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC14, PC25, PC35)

**List of use descriptors** : **Identified use name: ES057:** Industrial use of metal treatment products (AISE-P1001b, AISE-P1004, AISE-P1009, AISE-P1002, AISE-P1001a, AISE-P1006, AISE-P1007, AISE-P1008, AISE-P1003, AISE-P1005, AISE-P1010, AISE-P1011, AISE-P1001) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC10, PROC17, PROC18, PROC23, PC14, PC25, PC35; ERC04, ERC05
**Process Category:** PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC10, PROC17, PROC18, PROC23
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05
**Market sector by type of chemical product:** PC14, PC25, PC35

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10
**Lubrication at high energy conditions in metal working operations -** PROC17
**General greasing/lubrication at high kinetic energy conditions -** PROC18
**Open processing and transfer operations at substantially elevated temperature -** PROC23

**Number of the ES** : 057

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use/Outdoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 10 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 60 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 9: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 10: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 60 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

| | | |
|---|---|---|
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 11: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 12: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 13: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 14: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 480 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 15: Lubrication at high energy conditions in metal working operations**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 480 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 16: General greasing/lubrication at high kinetic energy conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 17: Open processing and transfer operations at substantially elevated temperature**

| | | |
|---|---|---|
| **Product characteristics** | : | Solid, medium dustiness. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1980 $cm^2$. |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.<br>Risk characterisation ratio: 0.027429.<br><br>**Worker - inhalative, long-term - systemic:** 0.483993 $mg/m^3$.<br>Risk characterisation ratio: 0.02745.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.054878. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.274391.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.057143 mg/kg bw/day.
Risk characterisation ratio: 0.005714.

**Worker - inhalative, long-term - systemic:** 0.100832 mg/m³.
Risk characterisation ratio: 0.005719.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.011433.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.085714 mg/kg bw/day.
Risk characterisation ratio: 0.008571.

**Worker - inhalative, long-term - systemic:** 0.151248 mg/m³.
Risk characterisation ratio: 0.008578.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.017149.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 0.604991 mg/m³.
Risk characterisation ratio: 0.034312.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.068598.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.085714 mg/kg bw/day.
Risk characterisation ratio: 0.008571.

**Worker - inhalative, long-term - systemic:** 0.037812 mg/m³.
Risk characterisation ratio: 0.002145.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.010716.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 0.151248 mg/m³.
Risk characterisation ratio: 0.008578.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.042864.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 0.483993 mg/m³.
Risk characterisation ratio: 0.02745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.713164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 12: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.768063.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 13: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 14: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 5.486 mg/kg bw/day.
Risk characterisation ratio: 0.548571.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.823068.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 15: Lubrication at high energy conditions in metal working operations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686137.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 16: General greasing/lubrication at high kinetic energy conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686137.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 17: Open processing and transfer operations at substantially elevated temperature**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.414 mg/kg bw/day.
Risk characterisation ratio: 0.141429.

**Worker - inhalative, long-term - systemic:** 0.300 mg/m³.
Risk characterisation ratio: 0.017015.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.158443.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Laboratory chemicals (PC21)

**List of use descriptors** : **Identified use name: ES058:** Industrial use of quality control (AISE-P1250) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC15, PC21; ERC04
**Process Category:** PROC15
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC21

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Use as laboratory reagent -** PROC15

**Number of the ES** : 058

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Use as laboratory reagent**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 0.241996 mg/m³.
Risk characterisation ratio: 0.013725.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.048011.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)

**List of use descriptors** : **Identified use name: ES059:** Industrial use of vehicle cleaning products (AISE-P707, AISE-P708) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC04, PROC08a, PC35; ERC04
**Process Category:** PROC04, PROC08a
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC35

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Chemical production where opportunity for exposure arises -** PROC04
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a

**Number of the ES** : 059

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Contributing scenario controlling worker exposure for 2: Chemical production where opportunity for exposure arises**

**Frequency and duration of use/exposure** : Exposure duration per day: 480 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use/Outdoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: 30 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use/Outdoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.274391.

Outdoor use:
**Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.233217.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Indoor use:
**Worker - dermal, long-term - systemic:** 0.171429 mg/kg bw/day.
Risk characterisation ratio: 0.017143.

**Worker - inhalative, long-term - systemic:** 3.025 mg/m³.
Risk characterisation ratio: 0.171561.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.188703.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 059 | ***Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)*** |

Outdoor use:
**Worker - dermal, long-term - systemic:** 0.171429 mg/kg bw/day.
Risk characterisation ratio: 0.017143.

**Worker - inhalative, long-term - systemic:** 2.117 mg/m³.
Risk characterisation ratio: 0.120092.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.137235.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC35, PC37)

**List of use descriptors** : **Identified use name: ES060:** Industrial use of water treatment products (AISE-P903, AISE-P904, AISE-P905) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC04, PROC08a, PROC08b, PROC09, PC35, PC37; ERC04
**Process Category:** PROC02, PROC04, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC35, PC37

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Chemical production where opportunity for exposure arises -** PROC04
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 060

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Outdoor use.

**Contributing scenario controlling worker exposure for 3: Chemical production where opportunity for exposure arises**

**Frequency and duration of use/exposure** : Exposure duration per day: 480 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Outdoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: 10 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Outdoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: 10 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Outdoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Outdoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 3.388 mg/m³.
Risk characterisation ratio: 0.192148.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.329291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.781788.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.057143 mg/kg bw/day.
Risk characterisation ratio: 0.005714.

**Worker - inhalative, long-term - systemic:** 0.705823 mg/m³.
Risk characterisation ratio: 0.040031.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.045745.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.057143 mg/kg bw/day.
Risk characterisation ratio: 0.005714.

**Worker - inhalative, long-term - systemic:** 0.352912 mg/m³.
Risk characterisation ratio: 0.020015.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.02573.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 060 | ***Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC35, PC37)*** |

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.781788.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES061:** Blowing agents (OL2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC12; ERC07, ERC08c
**Process Category:** PROC12
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC07, ERC08c

**Environmental contributing scenarios** : **Use of functional fluid at industrial site -** ERC07
**Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Use of blowing agents in manufacture of foam -** PROC12

**Number of the ES** : 061

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of functional fluid at industrial site**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 3: Use of blowing agents in manufacture of foam**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of functional fluid at industrial site**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Widespread use leading to inclusion into/ onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 3: Use of blowing agents in manufacture of foam**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.58328.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES062:** Industrial use of greasing agents (OL3) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC18; ERC04, ERC08f, ERC09b, ERC11a
**Process Category:** PROC18
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC08f, ERC09b, ERC11a

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Widespread use leading to inclusion into/onto article (outdoor) -** ERC08f
**Widespread use of functional fluid (outdoor) -** ERC09b
**Widespread use of articles with low release (indoor) -** ERC11a

**Health Contributing scenarios** : **General greasing/lubrication at high kinetic energy conditions -** PROC18

**Number of the ES** : 062

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Widespread use leading to inclusion into/onto article (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Widespread use of functional fluid (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 4: Widespread use of articles with low release (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 5: General greasing/lubrication at high kinetic energy conditions**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Widespread use leading to inclusion into/ onto article (outdoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 3: Widespread use of functional fluid (outdoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 4: Widespread use of articles with low release (indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 5: General greasing/lubrication at high kinetic energy conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.<br>Risk characterisation ratio: 0.548994.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.686137. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Intermediate (PC19)

**List of use descriptors** : **Identified use name: ES063:** Industrial uses (OL6) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC03, PC19; ERC06a
**Process Category:** PROC01, PROC03
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06a
**Market sector by type of chemical product:** PC19

**Environmental contributing scenarios** : **Use of intermediate -** ERC06a

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03

**Number of the ES** : 063

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of intermediate**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 063 | ***Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Intermediate (PC19)*** |

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of intermediate**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.048399 mg/m³.
Risk characterisation ratio: 0.002745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.006174.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES064:** Industrial use resulting in manufacture of another substance (use of intermediates) (ECO 3) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15; ERC06a
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06a

**Environmental contributing scenarios** : **Use of intermediate -** ERC06a

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Use as laboratory reagent -** PROC15

**Number of the ES** : 064

## Section 2 - Exposure controls

### Contributing scenario controlling environmental exposure for 1: Use of intermediate

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling worker exposure for: All Contributing scenarios

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Chemical production where opportunity for exposure arises**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 10: Use as laboratory reagent**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of intermediate**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.048399 mg/m³.
Risk characterisation ratio: 0.002745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.006174.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.171534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use

**List of use descriptors** : **Identified use name: ES065:** Intermediate (P&G/Croda) - Industrial: ERC06a
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06a

**Environmental contributing scenarios** : **Use of intermediate -** ERC06a

**Health Contributing scenarios** :

**Number of the ES** : 065

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of intermediate**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2:**

Not applicable.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of intermediate**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2:**

**Exposure assessment (human):** : Not applicable.

**Exposure estimation** : Not applicable.

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Laboratory chemicals (PC21)

**List of use descriptors** : **Identified use name: ES066:** Laboratory use (AISE-P1200) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC15, PC21; ERC08a
**Process Category:** PROC15
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC21

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Use as laboratory reagent -** PROC15

**Number of the ES** : 066

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Use as laboratory reagent**

PC20

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 0.483993 mg/m³.
Risk characterisation ratio: 0.02745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.061735.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES067:** Manual application of precured tread (ETRMA 25) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC21; ERC06d
**Process Category:** PROC21
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Low energy manipulation and handling of substances bound in/on materials or articles -** PROC21

**Number of the ES** : 067

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Product characteristics** : Solid, medium dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Low energy manipulation and handling of substances bound in/on materials or articles**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.<br>Risk characterisation ratio: 0.282857.<br><br>**Worker - inhalative, long-term - systemic:** 3 mg/m³.<br>Risk characterisation ratio: 0.170145.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.453002. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES068:** Manual metering, weighting possible, mainly synthetic rubbers and mixtures (ETRMA 1) - Formulation or re-packing/Industrial: PROC09; ERC03
**Process Category:** PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 068

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES069:** Manufacture of detergents and maintenance products (AISE-M1, AISE-M8, AISE-M9, AISE-M2, AISE-M3, AISE-M4, AISE-M5, AISE-M6, AISE-M7) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC09, PROC14, PROC15; ERC02
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC09, PROC14, PROC15
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14
**Use as laboratory reagent -** PROC15

**Number of the ES** : 069

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Chemical production where opportunity for exposure arises**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 9: Tabletting, compression, extrusion, pelletisation, granulation**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 10: Use as laboratory reagent**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.048399.

**Worker - inhalative, long-term - systemic:** 0.002745 mg/m³.
Risk characterisation ratio: 0.001647.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.006174.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.171534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES070:** Adhesives, sealants; Manufacture (EM 16, EM 24, EM 25, EM 26, EM 27, EM 17, EM 28, EM 18, EM 9, EM 10, EM 11, EM 19, EM 12, EM 20, EM 13, EM 21, EM 14, EM 22, EM 15, EM 23) - Formulation or re-packing/Industrial/ Professional: PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC12, PROC13, PROC14; ERC02
**Process Category:** PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC12, PROC13, PROC14
**Substance supplied to that use in form of:** As such, In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Use of blowing agents in manufacture of foam -** PROC12
**Treatment of articles by dipping and pouring -** PROC13
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 070

## Section 2 - Exposure controls

### Contributing scenario controlling environmental exposure for 1: Formulation into mixture

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling worker exposure for: All Contributing scenarios

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |

**Contributing scenario controlling worker exposure for 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 4: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 20%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 95%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 10: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 11: Non industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Professional use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 12: Use of blowing agents in manufacture of foam**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |

**Contributing scenario controlling worker exposure for 13: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 14: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Industrial use. |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.41164. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164677.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 12: Use of blowing agents in manufacture of foam**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.58328.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 13: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 14: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Artists Supply and Hobby preparations (PC05)

**List of use descriptors** : **Identified use name: ES071:** Artists Supply and Hobby preparations; Manufacture (EM 42, EM 43, EM 44, EM 45) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC05; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC05

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 071

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

| | | |
|---|---|---|
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Automotive care products (PC06)

**List of use descriptors** : **Identified use name: ES072:** Automotive care products; Manufacture (EM 34, EM 35, EM 36, EM 37) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC06; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC06

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 072

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

| | | |
|---|---|---|
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Manufacture

**List of use descriptors** : **Identified use name: ES073:** Manufacture of substance - Industrial: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15; ERC01
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC01

**Environmental contributing scenarios** : **Manufacture of the substance -** ERC01

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Use as laboratory reagent -** PROC15

**Number of the ES** : 073

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Manufacture of the substance**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Chemical production where opportunity for exposure arises**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 10: Use as laboratory reagent**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Manufacture of the substance**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.048399 mg/m³.
Risk characterisation ratio: 0.002745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.006174.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 10: Use as laboratory reagent**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.<br>Risk characterisation ratio: 0.034286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.171534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Air care products (PC03)

**List of use descriptors** : **Identified use name: ES074:** Air care products; Manufacture (EM 97, EM 98, EM 99, EM 100) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC03; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC03

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 074

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

| | | |
|---|---|---|
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Biocidal products (PC08)

**List of use descriptors** : **Identified use name: ES075:** Biocidal products; Manufacture (EM 101, EM 102, EM 103, EM 104, EM 105, EM 106, EM 107) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09, PC08; ERC02
**Process Category:** PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC08

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 075

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.048399 mg/m³.
Risk characterisation ratio: 0.002745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.006174.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Cosmetics, personal care products (PC39)

**List of use descriptors** : **Identified use name: ES076:** Manufacture of cosmetic products (COLIPA M6, COLIPA M8, COLIPA M3, COLIPA M1, COLIPA M5.2, COLIPA M5.1, COLIPA M2, COLIPA M4, COLIPA M7) - Formulation or re-packing/Industrial: PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15, PC15, PC39; ERC02
**Process Category:** PROC01, PROC02, PROC03, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC39

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Tabletting, compression, extrusion, pelletisation, granulation -** PROC14
**Use as laboratory reagent -** PROC15

**Number of the ES** : 076

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 9: Tabletting, compression, extrusion, pelletisation, granulation**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 10: Use as laboratory reagent**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.<br>Risk characterisation ratio: 0.003429.<br><br>**Worker - inhalative, long-term - systemic:** 0.048399 mg/m³.<br>Risk characterisation ratio: 0.002745.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.006174. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.41164. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.171534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Lawn and garden preparations, Fertilizers (PC22)

**List of use descriptors** : **Identified use name: ES077:** Lawn and garden preparations, including fertilizers; Manufacture (EM 50, EM 51, EM 52, EM 53) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC22; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC22

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 077

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Metal surface treatment products (PC14)

**List of use descriptors** : **Identified use name: ES078:** Metal surface treatment products, including galvanic and electroplating products; Manufacture (EM 1, EM 2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC07, PC14; ERC05
**Process Category:** PROC05, PROC07
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05
**Market sector by type of chemical product:** PC14

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Industrial spraying -** PROC07

**Number of the ES** : 078

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

PC14

**Product characteristics** : Covers percentage substance in the product up to 100%

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Industrial spraying**

PC14

**Product characteristics** : Covers percentage substance in the product up to 20%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Non-metal surface treatment products (PC15)

**List of use descriptors** : **Identified use name: ES079:** Non-metal surface treatment products; Manufacture (EM 3, EM 4, EM 5, EM 6) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC07, PROC08a, PROC09, PC15; ERC05
**Process Category:** PROC05, PROC07, PROC08a, PROC09
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05
**Market sector by type of chemical product:** PC15

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 079

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Covers percentage substance in the product up to 100%

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 20%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Covers percentage substance in the product up to 100%

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Perfumes, fragrances (PC28)

**List of use descriptors** : **Identified use name: ES080:** Perfumes, fragrances; Manufacture (EM 74, EM 75, EM 76, EM 77) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC28; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC28

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 080

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

| | | |
|---|---|---|
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Plant protection products (PC27)

**List of use descriptors** : **Identified use name: ES081:** Plant protection products; Manufacture (EM 66, EM 67, EM 68, EM 69) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC27; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC27

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 081

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

| | | |
|---|---|---|
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Polishes and wax blends (PC31)

**List of use descriptors** : **Identified use name: ES082:** Polishes and wax blends; Manufacture (EM 82, EM 83, EM 84, EM 85) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC31; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC31

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 082

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

| | | |
|---|---|---|
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents (PC20)

**List of use descriptors** : **Identified use name: ES083:** Products such as pH-regulators, flocculants, precipitants etc; Manufacture (EM 58, EM 59, EM 60, EM 61) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC20; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC20

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 083

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.822963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Water softeners (PC36)

**List of use descriptors** : **Identified use name: ES084:** Water softeners; Manufacture (EM 89, EM 90, EM 91, EM 92) - Formulation or re-packing/Industrial: PROC05, PROC08a, PROC08b, PROC09, PC36; ERC02
**Process Category:** PROC05, PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC36

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 084

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

| | | |
|---|---|---|
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES085:** Mixing in closed mixing unit (i.e. Banbury mixer) (ETRMA 4) - Formulation or re-packing/Industrial: PROC05; ERC03
**Process Category:** PROC05
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05

**Number of the ES** : 085

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES086:** Open mill mixing (tipical for laboratory scale) (ETRMA 5) - Formulation or re-packing/Industrial: PROC05; ERC03
**Process Category:** PROC05
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05

**Number of the ES** : 086

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.411534. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES087:** Painting, cement application and tyre treatment with lubricants (ETRMA 28) - Formulation or re-packing/Industrial: PROC10; ERC03
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 087

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.<br>Risk characterisation ratio: 0.027429.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.164677. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES088:** Part of rubber and rusted cords are removed from casing. Casing cleaning. (ETRMA 22) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC21; ERC06d
**Process Category:** PROC21
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Low energy manipulation and handling of substances bound in/on materials or articles -** PROC21

**Number of the ES** : 088

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Low energy manipulation and handling of substances bound in/on materials or articles**

**Product characteristics** : Solid, medium dustiness.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Low energy manipulation and handling of substances bound in/on materials or articles**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.829 mg/kg bw/day.<br>Risk characterisation ratio: 0.282857.<br><br>**Worker - inhalative, long-term - systemic:** 3 mg/m³.<br>Risk characterisation ratio: 0.170145.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.453002. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Intermediate (PC19)

**List of use descriptors** : **Identified use name: ES089:** Production of agrochemicals - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC03, PC19
**Process Category:** PROC03
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Market sector by type of chemical product:** PC19

**Environmental contributing scenarios** :

**Health Contributing scenarios** : **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03

**Number of the ES** : 089

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1:**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

PC19

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.
*or*
Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1:**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES090:** Production of food chemicals - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC03, PC19
**Process Category:** PROC03
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.

**Environmental contributing scenarios** :

**Health Contributing scenarios** : **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03

**Number of the ES** : 090

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1:**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.
*or*
Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1:**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.<br>Risk characterisation ratio: 0.068571.<br><br>**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.<br>Risk characterisation ratio: 0.082349.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.150921. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES091:** Production of intermediate in Industrial uses/Lubricants - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC03
**Process Category:** PROC03
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.

**Environmental contributing scenarios** :

**Health Contributing scenarios** : **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03

**Number of the ES** : 091

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1:**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.
*or*
Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1:**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.<br>Risk characterisation ratio: 0.068571.<br><br>**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.<br>Risk characterisation ratio: 0.082349.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.150921. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES092:** Professional use. Use as a solvent; Indoor (Processing aid) (”FEICA-UseR 22-”19, “FEICA-UseR 22-”20, “FEICA-UseR 22-”21, “FEICA-UseR 22-”17, “FEICA-UseR 22-”18) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC08b, PROC10, PROC11, PROC13; ERC08a
**Process Category:** PROC08a, PROC08b, PROC10, PROC11, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 092

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day:1-4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Contributing scenario controlling worker exposure for 4: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Contributing scenario controlling worker exposure for 5: Non industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Contributing scenario controlling worker exposure for 6: Treatment of articles by dipping and pouring**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.42546.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**

Risk characterisation ratio: 0.178412.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.439174.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.214286 mg/kg bw/day.
Risk characterisation ratio: 0.021429.

**Worker - inhalative, long-term - systemic:** 5.808 mg/m³.
Risk characterisation ratio: 0.329396.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.350825.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.178412.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES093:** Professional use. Use as a solvent; Outdoor (Processing aid) (”FEICA-UseR 22-”24, “FEICA-UseR 22-”25, “FEICA-UseR 22-”26, “FEICA-UseR 22-”22, “FEICA-UseR 22-”23) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC08b, PROC10, PROC11, PROC13; ERC08d
**Process Category:** PROC08a, PROC08b, PROC10, PROC11, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08d

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) -** ERC08d

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 093

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day:1-4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Outdoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Dermal - minimum efficiency of 99%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Contributing scenario controlling worker exposure for 4: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Contributing scenario controlling worker exposure for 5: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |

**Contributing scenario controlling worker exposure for 6: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.<br>Risk characterisation ratio: 0.013714.<br><br>**Worker - inhalative, long-term - systemic:** 5.082 mg/m³.<br>Risk characterisation ratio: 0.288222.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.301936. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.<br>Risk characterisation ratio: 0.013714.<br><br>**Worker - inhalative, long-term - systemic:** 2.033 mg/m³.<br>Risk characterisation ratio: 0.115289.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.129003. |

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 5.082 mg/m³.
Risk characterisation ratio: 0.288222.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.31565.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.214286 mg/kg bw/day.
Risk characterisation ratio: 0.021429.

**Worker - inhalative, long-term - systemic:** 4.066 mg/m³.
Risk characterisation ratio: 0.230577.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.252006.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.033 mg/m³.
Risk characterisation ratio: 0.115289.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.129003.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Building and construction preparations not covered elsewhere (PC10)

**List of use descriptors** : **Identified use name: ES094:** Professional use of construction chemicals; Indoor (CC-5-1) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC11, PROC13, PROC19, PC10; ERC08c
**Process Category:** PROC10, PROC11, PROC13, PROC19
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC10

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 094

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Non industrial spraying**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Treatment of articles by dipping and pouring**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Manual activities involving hand contact**

PC10

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Building and construction preparations not covered elsewhere (PC10)

**List of use descriptors** : **Identified use name: ES093:** Professional use of construction chemicals; Indoor, without spraying (CC-5-2) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC13, PROC19, PC10; ERC08c
**Process Category:** PROC10, PROC13, PROC19
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC10

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 095

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Treatment of articles by dipping and pouring**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Manual activities involving hand contact**

PC10

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Building and construction preparations not covered elsewhere (PC10)

**List of use descriptors** : **Identified use name: ES096:** Professional use of construction chemicals; Outdoor (CC-6-1) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC11, PROC13, PROC19, PC10; ERC08f
**Process Category:** PROC10, PROC11, PROC13, PROC19
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08f
**Market sector by type of chemical product:** PC10

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (outdoor) -** ERC08f

**Health Contributing scenarios** : **Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 096

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Outdoor use.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Non industrial spraying**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

**Contributing scenario controlling worker exposure for 4: Treatment of articles by dipping and pouring**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Manual activities involving hand contact**

PC10

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 4.235 mg/m³.
Risk characterisation ratio: 0.240185.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.267613.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 0.846988 mg/m³.
Risk characterisation ratio: 0.048037.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.074823.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.109788.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 2.541 mg/m³.
Risk characterisation ratio: 0.144111.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.568397.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Building and construction preparations not covered elsewhere (PC10)

**List of use descriptors** : **Identified use name: ES097:** Professional use of construction chemicals; Outdoor, without spraying (CC-6-2) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC13, PROC19, PC10; ERC08f
**Process Category:** PROC10, PROC13, PROC19
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08f
**Market sector by type of chemical product:** PC10

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (outdoor) -** ERC08f

**Health Contributing scenarios** : **Roller application or brushing -** PROC10
**Treatment of articles by dipping and pouring -** PROC13
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 097

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Outdoor use.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Treatment of articles by dipping and pouring**

PC10

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Manual activities involving hand contact**

PC10

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.123502.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.109788.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 1.016 mg/m³.
Risk characterisation ratio: 0.057644.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.48193.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES098:** Cosmetic products (ECO 7) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC19; ERC08a
**Process Category:** PROC19
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Manual activities involving hand contact -** PROC19

**Number of the ES** : 098

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Manual activities involving hand contact**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.414 mg/kg bw/day.
Risk characterisation ratio: 0.141429.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.415925.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES099:** Professional use of façade/surface cleaning products (AISE-P901, AISE-P902) - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC08a, PROC11; ERC08d
**Process Category:** PROC07, PROC08a, PROC08b, PROC11
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08d

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) -** ERC08d

**Health Contributing scenarios** : **Industrial spraying -** PROC07
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Non industrial spraying -** PROC11

**Number of the ES** : 099

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Outdoor use.

**Contributing scenario controlling worker exposure for 2: Industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 20%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 5: Non industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Professional use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.714 mg/kg bw/day.
Risk characterisation ratio: 0.171429.

**Worker - inhalative, long-term - systemic:** 3.388 mg/m³.
Risk characterisation ratio: 0.192148.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.363576.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Industrial:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 3.388 mg/m³.
Risk characterisation ratio: 0.192148.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.466434.

Professional:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 8.47 mg/m³.
Risk characterisation ratio: 0.48037.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.754655.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : Industrial:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37036.

Professional:
**Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 3.388 mg/m³.
Risk characterisation ratio: 0.192148.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.466434.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 099 | ***Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)*** |

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.12286.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)

**List of use descriptors** : **Identified use name: ES100:** Professional Use of Food beverage and pharmacos products (AISE-P808) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PC35; ERC08a
**Process Category:** PROC08a, PROC10
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC35

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10

**Number of the ES** : 100

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 16 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 100 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)*** |

**Contributing scenario controlling worker exposure for 3: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: 480 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.091429 mg/kg bw/day.
Risk characterisation ratio: 0.009143.

**Worker - inhalative, long-term - systemic:** 4.033 mg/m³.
Risk characterisation ratio: 0.228747.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.23789.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Cosmetics, personal care products (PC39)

**List of use descriptors** : **Identified use name: ES101:** Professional use of hand cleaners (AISE-P1300) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC19, PC39; ERC08a
**Process Category:** PROC19
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC39

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Manual activities involving hand contact -** PROC19

**Number of the ES** : 101

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Manual activities involving hand contact**

PC39

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 25%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 101 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Cosmetics, personal care products (PC39)*** |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.836031

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Polishes and wax blends (PC31)

**List of use descriptors** : **Identified use name: ES102:** Professional use of maintenance products (AISE-P605) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC08a, PC31; ERC08a
**Process Category:** PROC02, PROC08a
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC31

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a

**Number of the ES** : 102

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Frequency and duration of use/exposure** : Exposure duration per day: 5 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: 1 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.014286 mg/kg bw/day.
Risk characterisation ratio: 0.001429.

**Worker - inhalative, long-term - systemic:** 0.25208 mg/m³.
Risk characterisation ratio: 0.014297.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.015725.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.005714 mg/kg bw/day.
Risk characterisation ratio: 0.000571.

**Worker - inhalative, long-term - systemic:** 0.025208 mg/m³.
Risk characterisation ratio: 0.00143.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.002001.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)

**List of use descriptors** : **Identified use name: ES103:** Professional use of medical devices (AISE-P1104, AISE-P1102, AISE-P1103, AISE-P1101) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC04, PROC08a, PROC11, PROC13, PC35; ERC08a
**Process Category:** PROC04, PROC08a, PROC11, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC35

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Chemical production where opportunity for exposure arises -** PROC04
**Chemical production where opportunity for exposure arises -** PROC04
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 103

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production where opportunity for exposure arises**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

| | |
|---|---|
| **Technical conditions and measures to control dispersion from source towards the worker** | : Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 3: Chemical production where opportunity for exposure arises**

| | |
|---|---|
| **Product characteristics** | : Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : Exposure duration per day: 240 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | |
|---|---|
| **Personal protection** | : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | |
|---|---|
| **Product characteristics** | : Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : Exposure duration per day: 5 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : Exposed skin surface assumed: 960 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | |
|---|---|
| **Personal protection** | : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | |
|---|---|
| **Product characteristics** | : Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : Exposure duration per day: 20 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : Exposed skin surface assumed: 960 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | |
|---|---|
| **Personal protection** | : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 7: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: <15 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 8: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 105 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Technical conditions and measures to control dispersion from source towards the worker** | : | Local exhaust ventilation: Inhalation - minimum efficiency of 80%. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 9: Treatment of articles by dipping and pouring**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 1.936 mg/m³.
Risk characterisation ratio: 0.109799.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.795513.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.343068.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.028571 mg/kg bw/day.
Risk characterisation ratio: 0.002857.

**Worker - inhalative, long-term - systemic:** 0.025208 mg/m³.
Risk characterisation ratio: 0.00143.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.004287.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.114286 mg/kg bw/day.
Risk characterisation ratio: 0.011429.

**Worker - inhalative, long-term - systemic:** 0.100832 mg/m³.
Risk characterisation ratio: 0.005719.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.017147.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.356635.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.600 mg/kg bw/day.
Risk characterisation ratio: 0.060.

**Worker - inhalative, long-term - systemic:** 2.117 mg/m³.
Risk characterisation ratio: 0.120092.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.180092.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 103 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)*** |

**Exposure estimation and reference to its source - Workers: 9: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Washing and cleaning products (PC35)

**List of use descriptors** : **Identified use name: ES104:** Professional use of vehicle cleaning products - Industrial/Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC04, PROC08a, PROC10, PROC11, PC35; ERC8a
**Process Category:** PROC04, PROC08a, PROC10, PROC11
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC35

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Chemical production where opportunity for exposure arises -** PROC04
**Chemical production where opportunity for exposure arises -** PROC04
**Chemical production where opportunity for exposure arises -** PROC04
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11

**Number of the ES** : 104

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Contributing scenario controlling worker exposure for 2: Chemical production where opportunity for exposure arises**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Outdoor use.
Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Chemical production where opportunity for exposure arises**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 480 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.
Professional use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Chemical production where opportunity for exposure arises**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 480 min/day.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Outdoor use.
Professional use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Outdoor use.
Industrial use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 30 min/day.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use.<br>Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use.<br>Professional use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 8: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use.<br>Industrial use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 9: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use.<br>Professional use. |
| **Conditions and measures related to personal protection, hygiene and health evaluation** | | |
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

| | | |
|---|---|---|
| **Contributing scenario controlling worker exposure for 10: Non industrial spraying** | | |
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use.<br>Professional use. |
| **Conditions and measures related to personal protection, hygiene and health evaluation** | | |
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

| | | |
|---|---|---|
| **Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)** | | |
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

| | | |
|---|---|---|
| **Exposure estimation and reference to its source - Workers: 2: Chemical production where opportunity for exposure arises** | | |
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.<br>Risk characterisation ratio: 0.096074.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.781788. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

| | | |
|---|---|---|
| **Exposure estimation and reference to its source - Workers: 3: Chemical production where opportunity for exposure arises** | | |
| **Exposure assessment (human):** | : | EASY TRA v3.5 |

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 3.388 mg/m³.
Risk characterisation ratio: 0.192148.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.329291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 0.67759 mg/m³.
Risk characterisation ratio: 0.03843.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.312715.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.171429 mg/kg bw/day.
Risk characterisation ratio: 0.017143.

**Worker - inhalative, long-term - systemic:** 0.756239 mg/m³.
Risk characterisation ratio: 0.04289.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.060033.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37036.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.123502.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 4.235 mg/m³.
Risk characterisation ratio: 0.240185.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.267613.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 1.694 mg/m³.
Risk characterisation ratio: 0.096074.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.12286.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES105:** Professional application of coatings and inks (CEPE AP0404, CEPE AP0405, CEPE AP0406, CEPE AP0402, CEPE AP0403, CEPE AP0501, CEPE AP0407, CEPE AP0302, CEPE AP0504 CEPEAP0505, CEPE AP0506 CEPEAP0507, CEPE AP0701, CEPE AP0102, CEPE AP0103, CEPE AP0104, CEPE AP0201, CEPE AP1201, CEPE AP0502, CEPE AP0503, CEPE AP0202, CEPE AP0203, CEPE AP0303, CEPE AP0304, CEPE AP0702, CEPE AP0703, CEPE AP0704, CEPE AP0705, CEPE AP1101, CEPE AP0101, CEPE AP0204, CEPE AP0205, CEPE AP0305, CEPE AP0401, CEPE AP1202, CEPE AP1203) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC02, PROC03, PROC04, PROC05, PROC08a, PROC10, PROC11, PROC19; ERC08a
**Process Category:** PROC02, PROC03, PROC04, PROC05, PROC08a, PROC10, PROC11, PROC19
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 105

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use. |

**Contributing scenario controlling worker exposure for 5: Chemical production where opportunity for exposure arises**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 25%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Outdoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 9: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 10: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 11: Manual activities involving hand contact**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 25%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1980 cm². |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 95%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.<br>Risk characterisation ratio: 0.137143.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.274391. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150921.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 10.164 mg/m³.
Risk characterisation ratio: 0.576443.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.645015.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.114 mg/kg bw/day.
Risk characterisation ratio: 0.411429.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.576127.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686031.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 8.47 mg/m³.
Risk characterisation ratio: 0.48037.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.754655.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 105 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)*** |

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES106:** Adhesives, sealants (EM 31, EM 32, EM 33, EM 29, EM 30) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC08b, PROC10, PROC11, PROC19; ERC08a
**Process Category:** PROC05, PROC08b, PROC10, PROC11, PROC19
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 106

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 4: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 5: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Manual activities involving hand contact**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 25%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1980 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 95%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES107:** Air care products (AISE-P501, AISE-P504, AISE-P503, AISE-P502, AISE-P505) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC11, PROC13; ERC08a
**Process Category:** PROC08a, PROC11, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 107

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Non industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Treatment of articles by dipping and pouring**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 7.26 mg/m³.
Risk characterisation ratio: 0.411745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686031.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 107 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)*** |

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150963.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Artists Supply and Hobby preparations (PC05)

**List of use descriptors** : **Identified use name: ES108:** Artists Supply and Hobby preparations (EM 47, EM 46) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC05; ERC08c
**Process Category:** PROC05, PROC19
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC05

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 108

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

PC05

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Manual activities involving hand contact**

PC05

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Automotive care products (PC06)

**List of use descriptors** : **Identified use name: ES109:** Automotive care products (EM 38, EM 39) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC11, PC06; ERC08a
**Process Category:** PROC11
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC06

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Non industrial spraying -** PROC11

**Number of the ES** : 109

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Non industrial spraying**

PC06

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES110:** Professional use of dishwash products (AISE-P203, AISE-P201, AISE-P202, AISE-P204) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC08a, PROC09, PROC10; ERC08a
**Process Category:** PROC01, PROC02, PROC08a, PROC09, PROC10
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Roller application or brushing -** PROC10

**Number of the ES** : 110

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: <15 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: <15 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: <15 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 6: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.00484 mg/m³.
Risk characterisation ratio: 0.000274.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.003703.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.274391.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 110 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)*** |

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES111:** Professional use of floor care products (AISE-P401, AISE-P403, AISE-P404, AISE-P405, AISE-P406, AISE-P407, AISE-P409, AISE-P410, AISE-P402, AISE-P408, AISE-P411) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PROC11; ERC08a
**Process Category:** PROC08a, PROC10, PROC11
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11

**Number of the ES** : 111

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Non industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 111 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)*** |

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES112:** Professional use of general surface cleaning products (AISE-P301, AISE-P303, AISE-P305, AISE-P310, AISE-P312, AISE-P314, AISE-P316, AISE-P317, AISE-P302, AISE-P304, AISE-P306, AISE-P307, AISE-P308, AISE-P311, AISE-P313, AISE-P315, AISE-P309) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PROC11, PROC13; ERC08a
**Process Category:** PROC08a, PROC10, PROC11, PROC13
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10
**Roller application or brushing -** PROC10
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Non industrial spraying -** PROC11
**Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 112

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: <15 minutes.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 4: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: >4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 5: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 6: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 7: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |

**Contributing scenario controlling worker exposure for 8: Non industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Contributing scenario controlling worker exposure for 9: Treatment of articles by dipping and pouring**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.411534.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.233301.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.096053.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.301283.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.137143 mg/kg bw/day.
Risk characterisation ratio: 0.013714.

**Worker - inhalative, long-term - systemic:** 0.483993 mg/m³.
Risk characterisation ratio: 0.02745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.041164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES113:** Professional use of laundry products (AISE-P102, AISE-P103, AISE-P105, AISE-P106, AISE-P111, AISE-P112, AISE-P113) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC08a, PROC11; ERC08a
**Process Category:** PROC01, PROC08a, PROC11
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Non industrial spraying -** PROC11

**Number of the ES** : 113

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 113 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)*** |

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 4: Non industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.00484 mg/m³.
Risk characterisation ratio: 0.000274.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.003703.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.
Risk characterisation ratio: 0.068624.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.34291.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.301283.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Biocidal products (PC08)

**List of use descriptors** : **Identified use name: ES114:** Professional use of biocidal products (EM 108, EM 109) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC11, PC08; ERC08f
**Process Category:** PROC11
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08f
**Market sector by type of chemical product:** PC08

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (outdoor) -** ERC08f

**Health Contributing scenarios** : **Non industrial spraying -** PROC11

**Number of the ES** : 114

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Non industrial spraying**

PC08

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Lawn and garden preparations, including fertilizers (PC22)

**List of use descriptors** : **Identified use name: ES115:** Lawn and garden preparations, including fertilizers (EM 55, EM 54) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC22; ERC08d
**Process Category:** PROC05, PROC19
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08d
**Market sector by type of chemical product:** PC22

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) -** ERC08d

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 115

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Manual activities involving hand contact**

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 115 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Lawn and garden preparations, including fertilizers (PC22)*** |

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES116:** Professional use of maintenance products (AISE-P601, AISE-P603, AISE-P608, AISE-P602, AISE-P604, AISE-P609, AISE-P606, AISE-P607) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC10, PROC11; ERC08a
**Process Category:** PROC08a, PROC10, PROC11
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11
**Non industrial spraying -** PROC11

**Number of the ES** : 116

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Product characteristics** : Covers percentage substance in the product up to 100%

**Frequency and duration of use/exposure** : Exposure duration per day: <15 minutes.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Roller application or brushing**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |

**Contributing scenario controlling worker exposure for 4: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Non industrial spraying**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 5%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 1500 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 1.21 mg/m³.<br>Risk characterisation ratio: 0.068624.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.34291. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 3: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.233301.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.109135.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.301283.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Perfumes, fragrances (PC28)

**List of use descriptors** : **Identified use name: ES117:** Perfumes, fragrances (EM 79, EM 78) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC28; ERC08c
**Process Category:** PROC05, PROC19
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC28

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 117

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Manual activities involving hand contact**

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Plant protection products (PC27)

**List of use descriptors** : **Identified use name: ES118:** Plant protection products (EM 71, EM 70) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC27; ERC08c
**Process Category:** PROC05, PROC19
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC27

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 118

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

PC27

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Manual activities involving hand contact**

PC27

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Polishes and wax blends (PC31)

**List of use descriptors** : **Identified use name: ES119:** Polishes and wax blends (EM 87, EM 86, EM 88) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC11, PC31; ERC08c
**Process Category:** PROC10, PROC11
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC31

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Roller application or brushing -** PROC10
**Non industrial spraying -** PROC11

**Number of the ES** : 119

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Non industrial spraying**

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.
Risk characterisation ratio: 0.343121.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.37055.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Non industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.267857 mg/kg bw/day.
Risk characterisation ratio: 0.026786.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164034.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents (PC20)

**List of use descriptors** : **Identified use name: ES120:** Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents (EM 63) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC19, PC20; ERC08a
**Process Category:** PROC19
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC20

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Manual activities involving hand contact -** PROC19

**Number of the ES** : 120

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Manual activities involving hand contact**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 25%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 120 | ***Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents (PC20)*** |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Polishes and wax blends (PC31)

**List of use descriptors** : **Identified use name: ES121:** Water softeners (EM 94, EM 93) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC05, PROC19, PC31; ERC08a
**Process Category:** PROC05, PROC19
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC31

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05
**Manual activities involving hand contact -** PROC19

**Number of the ES** : 121

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Manual activities involving hand contact**

**Product characteristics** : Covers percentage substance in the product up to 25%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1980 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Manual activities involving hand contact**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 4.243 mg/kg bw/day.
Risk characterisation ratio: 0.424286.

**Worker - inhalative, long-term - systemic:** 3.63 mg/m³.
Risk characterisation ratio: 0.205873.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.630158.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES122:** Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation (ETRMA 31) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC13; ERC06d
**Process Category:** PROC13
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 122

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Treatment of articles by dipping and pouring**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES123:** Skived cavities are filled with extruded rubber (ETRMA 24) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**Process Category:** PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 123

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES124:** Spray application, wiping cement. (ETRMA 23) - Formulation or re-packing/Industrial: PROC07; ERC03
**Process Category:** PROC07
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Industrial spraying -** PROC07

**Number of the ES** : 124

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Industrial spraying**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 20%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Industrial spraying**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.<br>Risk characterisation ratio: 0.042857.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.317354. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Textile dyes and impregnating products (PC34)

**List of use descriptors** : **Identified use name: ES125:** Textile application: calendering (EM 8) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC06, PC34; ERC05
**Process Category:** PROC06
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Calendering operations -** PROC06

**Number of the ES** : 125

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Calendering operations**

PC34

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Calendering operations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 5.486 mg/kg bw/day.
Risk characterisation ratio: 0.548571.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.68582.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES126:** Transferring cement into portable drums (ETRMA 8) - Formulation or re-packing/Industrial: PROC09; ERC03
**Process Category:** PROC09
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 126

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.<br>Risk characterisation ratio: 0.685714.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.822963. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing

**List of use descriptors** : **Identified use name: ES127:** Treatment with lubricant. Lubrifiant, improve flox during mechanical treatment (ETRMA 17) - Formulation or re-packing/Industrial: PROC10; ERC03
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC03

**Environmental contributing scenarios** : **Formulation into solid matrix -** ERC03

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 127

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into solid matrix**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.<br>Risk characterisation ratio: 0.027429.<br><br>**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.<br>Risk characterisation ratio: 0.137248.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.164677. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES128:** Treatment with releasing agents Applied on tyre (cold) (ETRMA 13) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07; ERC06d
**Process Category:** PROC07
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Industrial spraying -** PROC07

**Number of the ES** : 128

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Industrial spraying**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 20%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use/ Formulation or re-packing; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES129:** Use as an intermediate or process chemical Includes recycling/recovery, material transfer, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container). (C9 acid) - Formulation or re-packing/Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15; ERC02, ERC03, ERC04
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02, ERC03, ERC04

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02
**Formulation into solid matrix -** ERC03
**Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions -** PROC01
**Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions -** PROC02
**Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition -** PROC03
**Chemical production where opportunity for exposure arises -** PROC04
**Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09
**Use as laboratory reagent -** PROC15

**Number of the ES** : 129

## Section 2 - Exposure controls

### Contributing scenario controlling environmental exposure for 1: Formulation into mixture

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling environmental exposure for 2: Formulation into solid matrix

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

### Contributing scenario controlling environmental exposure for 3: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 4: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 5: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Contributing scenario controlling worker exposure for 6: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

**Contributing scenario controlling worker exposure for 7: Chemical production where opportunity for exposure arises**

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 8: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 9: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 10: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 11: Use as laboratory reagent**

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 2: Formulation into solid matrix**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Environment: 3: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 4: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.034286 mg/kg bw/day.
Risk characterisation ratio: 0.003429.

**Worker - inhalative, long-term - systemic:** 0.00968 mg/m³.
Risk characterisation ratio: 0.000549.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.003978.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 0.967986 mg/m³.
Risk characterisation ratio: 0.054899.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.192042.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.685714 mg/kg bw/day.
Risk characterisation ratio: 0.068571.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.23327.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 7: Chemical production where opportunity for exposure arises**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 6.857 mg/kg bw/day.
Risk characterisation ratio: 0.685714.

**Worker - inhalative, long-term - systemic:** 0.483993 mg/m³.
Risk characterisation ratio: 0.02745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.713164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 8: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

| *hexanoic acid* | Exposure Scenario: 129 | ***Industrial use/ Formulation or re-packing; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)*** |
|---|---|---|

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 9: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 0.483993 mg/m³.
Risk characterisation ratio: 0.02745.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.301735.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 10: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.41164.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 11: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.308783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES130:** Use of the substance within laboratory settings, including material transfer and equipment cleaning. (C9 acid) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC15; ERC04
**Process Category:** PROC10, PROC15
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Roller application or brushing -** PROC10
**Use as laboratory reagent -** PROC15

**Number of the ES** : 130

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Contributing scenario controlling worker exposure for 3: Use as laboratory reagent**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 240 cm².

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 0.241996 mg/m³.
Risk characterisation ratio: 0.013725.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.150868.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Use as laboratory reagent**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.
Risk characterisation ratio: 0.034286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.308783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Professional use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES131:** Use of the substance within laboratory settings, including material transfer and equipment cleaning. (C9 acid) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PROC15; ERC08a, ERC08b
**Process Category:** PROC10, PROC15
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a, ERC08b

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a
**Widespread use of reactive processing aid (no inclusion into or onto article, indoor) -** ERC08b

**Health Contributing scenarios** : **Roller application or brushing -** PROC10
**Use as laboratory reagent -** PROC15

**Number of the ES** : 131

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Widespread use of reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 3: Roller application or brushing**

**Product characteristics** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 $cm^2$.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Use as laboratory reagent**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 15 minutes - 1 hours.<br>Frequency: 5 days per week. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 240 cm². |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Widespread use of reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 3: Roller application or brushing**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.<br>Risk characterisation ratio: 0.027429.<br><br>**Worker - inhalative, long-term - systemic:** 6.05 mg/m³.<br>Risk characterisation ratio: 0.343121.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.37055. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Workers: 4: Use as laboratory reagent**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 0.342857 mg/kg bw/day.<br>Risk characterisation ratio: 0.034286.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.308783. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES132:** Vulcanization of green cushion layer or green tyre and evacuation of cured article and fumes (ETRMA 27) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**Process Category:** PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 132

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES133:** Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes) (ETRMA 16) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC14; ERC06d
**Process Category:** PROC14
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06d

**Environmental contributing scenarios** : **Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) -** ERC06d

**Health Contributing scenarios** : **Tabletting, compression, extrusion, pelletisation, granulation -** PROC14

**Number of the ES** : 133

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Tabletting, compression, extrusion, pelletisation, granulation**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 3.429 mg/kg bw/day.
Risk characterisation ratio: 0.342857.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.480106.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES134:** Wide dispersive indoor use of substances in closed systems (OL4) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07; ERC09a
**Process Category:** PROC07
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC09a

**Environmental contributing scenarios** : **Widespread use of functional fluid (indoor) -** ERC09a

**Health Contributing scenarios** : **Industrial spraying -** PROC07

**Number of the ES** : 134

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of functional fluid (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Industrial spraying**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 20%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of functional fluid (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.428571 mg/kg bw/day.
Risk characterisation ratio: 0.042857.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.317354.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Professional**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Widespread use by professional workers; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23)

**List of use descriptors** : **Identified use name: ES135:** Wide dispersive outdoor use of substances in closed systems (OL5) - Professional: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08b; ERC09b
**Process Category:** PROC08b
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC09b

**Environmental contributing scenarios** : **Widespread use of functional fluid (outdoor) -** ERC09b

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b

**Number of the ES** : 135

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of functional fluid (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Respiratory protection** : Wear respiratory protection. Inhalation - minimum efficiency of 90%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of functional fluid (outdoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC24, PC34)

**List of use descriptors** : **Identified use name: ES136:** Application of non processing aids (TEGEWA 8, TEGEWA 9, TEGEWA 7) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC13, PROC17, PC24, PC34; ERC05
**Process Category:** PROC07, PROC13, PROC17
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05
**Market sector by type of chemical product:** PC24, PC34

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Industrial spraying -** PROC07
**Treatment of articles by dipping and pouring -** PROC13
**Lubrication at high energy conditions in metal working operations -** PROC17

**Number of the ES** : 136

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Industrial spraying**

**Product characteristics** : Covers percentage substance in the product up to 20%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Treatment of articles by dipping and pouring**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Lubrication at high energy conditions in metal working operations**

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.714 mg/kg bw/day.
Risk characterisation ratio: 0.171429.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.445925.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**

Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Lubrication at high energy conditions in metal working operations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686137.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC24, PC34)

**List of use descriptors** : **Identified use name: ES137:** Application of processing aids (TEGEWA 4, TEGEWA 5) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC07, PROC13, PROC17, PC24, PC34; ERC04
**Process Category:** PROC07, PROC13, PROC17
**Substance supplied to that use in form of:** As such, In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC24, PC34

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Industrial spraying -** PROC07
**Treatment of articles by dipping and pouring -** PROC13
**Lubrication at high energy conditions in metal working operations -** PROC17

**Number of the ES** : 137

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

**Product characteristics** : Low volatile liquid.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Other conditions affecting workers exposure** : Indoor use.

**Contributing scenario controlling worker exposure for 2: Industrial spraying**

PC24, PC34

**Product characteristics** : Covers percentage substance in the product up to 20%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 1500 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 95%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 3: Treatment of articles by dipping and pouring**

PC24, PC34

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

**Contributing scenario controlling worker exposure for 4: Lubrication at high energy conditions in metal working operations**

PC24, PC34

**Product characteristics** : Covers percentage substance in the product up to 100%.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Dermal - minimum efficiency of 95%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Industrial spraying**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.714 mg/kg bw/day.
Risk characterisation ratio: 0.171429.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.445925.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 3: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.
Risk characterisation ratio: 0.274497.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.548783.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 4: Lubrication at high energy conditions in metal working operations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 9.68 mg/m³.
Risk characterisation ratio: 0.548994.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.686137.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Various products (PC20, PC23, PC32)

**List of use descriptors** : **Identified use name: ES138:** Blending (TEGEWA 1) - Formulation or re-packing/ Industrial: PROC05, PC20, PC23, PC32; ERC02
**Process Category:** PROC05
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC20, PC23, PC32

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05

**Number of the ES** : 138

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 $cm^2$.

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.548783. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Formulation or re-packing; Various products (PC20, PC23, PC32)

**List of use descriptors** : **Identified use name: ES139:** Blending LEV (TEGEWA Leather 2) - Formulation or re-packing/Industrial: PROC05, PC20, PC23, PC32; ERC02
**Process Category:** PROC05
**Substance supplied to that use in form of:** As such
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC02
**Market sector by type of chemical product:** PC20, PC23, PC32

**Environmental contributing scenarios** : **Formulation into mixture -** ERC02

**Health Contributing scenarios** : **Mixing or blending in batch processes -** PROC05

**Number of the ES** : 139

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Formulation into mixture**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Mixing or blending in batch processes**

PC20, PC23, PC32

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%.

**Frequency and duration of use/exposure** : Exposure duration per day: 15 minutes - 1 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Formulation into mixture**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Mixing or blending in batch processes**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.<br>Risk characterisation ratio: 0.274286.<br><br>**Worker - inhalative, long-term - systemic:** 4.84 mg/m³.<br>Risk characterisation ratio: 0.274497.<br><br>**Worker - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.548783. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation. |

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC20, PC23, PC32)

**List of use descriptors** : **Identified use name: ES140:** Handling (TEGEWA Leather 8, TEGEWA Leather 10, TEGEWA Leather 9, TEGEWA Leather 4, TEGEWA Leather 7, TEGEWA Leather 3, TEGEWA Leather 5, TEGEWA Leather 11, TEGEWA Leather 6) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC08a, PROC08b, PROC09, PC20, PC23, PC32; ERC04, ERC05, ERC06b
**Process Category:** PROC08a, PROC08b, PROC09
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04, ERC05, ERC06b
**Market sector by type of chemical product:** PC20, PC23, PC32

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04
**Use at industrial site leading to inclusion into/onto article -** ERC05
**Use of reactive processing aid at industrial site (no inclusion into or onto article) -** ERC06b

**Health Contributing scenarios** : **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -** PROC08a
**Transfer of substance or mixture (charging and discharging) at dedicated facilities -** PROC08b
**Transfer of substance or mixture into small containers (dedicated filling line, including weighing) -** PROC09

**Number of the ES** : 140

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Use at industrial site leading to inclusion into/ onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 3: Use of reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for: All Contributing scenarios**

| | | |
|---|---|---|
| **Product characteristics** | : | Low volatile liquid. |
| **Concentration of substance in mixture or article** | : | Covers percentage substance in the product up to 100%. |
| **Frequency and duration of use/exposure** | : | Exposure duration per day: 1-4 hours.<br>Frequency: 5 days per week. |
| **Other conditions affecting workers exposure** | : | Indoor use. |

**Contributing scenario controlling worker exposure for 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 960 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

**Contributing scenario controlling worker exposure for 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 480 cm². |

**Conditions and measures related to personal protection, hygiene and health evaluation**

| | | |
|---|---|---|
| **Personal protection** | : | Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%. |
| **Respiratory protection** | : | Wear respiratory protection. Inhalation - minimum efficiency of 90%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Use at industrial site leading to inclusion into/ onto article**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 3: Use of reactive processing aid at industrial site (no inclusion into or onto article)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Workers: 4: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 5: Transfer of substance or mixture (charging and discharging) at dedicated facilities**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.356635.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Workers: 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 1.371 mg/kg bw/day.
Risk characterisation ratio: 0.137143.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.219492.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC23, P32)

**List of use descriptors** : **Identified use name: ES141:** Use for leather finishing 1 (TEGEWA Leather 15) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PC23, P32; ERC04
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC23, PC32

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 141

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

PC23, P32

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164677.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC23, P32)

**List of use descriptors** : **Identified use name: ES142:** Use for leather finishing 2 (TEGEWA Leather 16) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PC23, P32; ERC05
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05
**Market sector by type of chemical product:** PC23, PC32

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 142

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

PC23, P32

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: >4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 2.42 mg/m³.
Risk characterisation ratio: 0.137248.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.164677.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC23, P32)

**List of use descriptors** : **Identified use name: ES143:** Use for leather finishing 3 (TEGEWA Leather 17) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PC23, P32; ERC04
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC23, PC32

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 143

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.109778.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC23, P32)

**List of use descriptors** : **Identified use name: ES144:** Use for leather finishing 4 (TEGEWA Leather 18) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC10, PC23, P32; ERC05
**Process Category:** PROC10
**Substance supplied to that use in form of:** In a mixture
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05
**Market sector by type of chemical product:** PC23, PC32

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Roller application or brushing -** PROC10

**Number of the ES** : 144

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Roller application or brushing**

PC23, P32

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 5%.

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 960 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Roller application or brushing**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 0.274286 mg/kg bw/day.
Risk characterisation ratio: 0.027429.

**Worker - inhalative, long-term - systemic:** 1.452 mg/m³.
Risk characterisation ratio: 0.082349.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.109778.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC20, P23)

**List of use descriptors** : **Identified use name: ES145:** Use in wet end 2 (TEGEWA Leather 13) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC13, PC20, PC23; ERC05
**Process Category:** PROC13
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC05
**Market sector by type of chemical product:** PC20, PC23

**Environmental contributing scenarios** : **Use at industrial site leading to inclusion into/onto article -** ERC05

**Health Contributing scenarios** : **Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 145

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use at industrial site leading to inclusion into/onto article**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Treatment of articles by dipping and pouring**

PC20, PC23

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use at industrial site leading to inclusion into/ onto article**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC20, P23)

**List of use descriptors** : **Identified use name: ES146:** Use in wet end 3 (TEGEWA Leather 14) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC13, PC20, PC23; ERC06b
**Process Category:** PROC13
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC06b
**Market sector by type of chemical product:** PC20, PC23

**Environmental contributing scenarios** : **Use of reactive processing aid at industrial site (no inclusion into or onto article) -** ERC06b

**Health Contributing scenarios** : **Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 146

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Treatment of articles by dipping and pouring**

PC20, PC23

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Industrial**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Industrial use; Various sectors (SU01, SU04, SU05, SU08, SU09, SU17, SU23); Various products (PC20, P23)

**List of use descriptors** : **Identified use name: ES147:** Use in wet end 1 (TEGEWA Leather 12) - Industrial: SU01, SU04, SU05, SU08, SU09, SU17, SU23; PROC13, PC20, PC23; ERC04
**Process Category:** PROC13
**Substance supplied to that use in form of:** As such
**Sector of end use:** SU01, SU04, SU05, SU08, SU09, SU17, SU23
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC04
**Market sector by type of chemical product:** PC20, PC23

**Environmental contributing scenarios** : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) -** ERC04

**Health Contributing scenarios** : **Treatment of articles by dipping and pouring -** PROC13

**Number of the ES** : 147

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling worker exposure for 2: Treatment of articles by dipping and pouring**

PC20, PC23

**Product characteristics** : Low volatile liquid.

**Concentration of substance in mixture or article** : Covers percentage substance in the product up to 100%

**Frequency and duration of use/exposure** : Exposure duration per day: 1-4 hours.
Frequency: 5 days per week.

**Human factors not influenced by risk management** : Exposed skin surface assumed: 480 cm².

**Other conditions affecting workers exposure** : Indoor use.

**Technical conditions and measures to control dispersion from source towards the worker** : Local exhaust ventilation: Inhalation - minimum efficiency of 90%.

**Conditions and measures related to personal protection, hygiene and health evaluation**

**Personal protection** : Wear suitable gloves tested to EN374. Dermal - minimum efficiency of 80%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Workers: 2: Treatment of articles by dipping and pouring**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Worker - dermal, long-term - systemic:** 2.743 mg/kg bw/day.
Risk characterisation ratio: 0.274286.

**Worker - inhalative, long-term - systemic:** 2.904 mg/m³.
Risk characterisation ratio: 0.164698.

**Worker - combined, long-term - systemic:**
Risk characterisation ratio: 0.438984.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels. The risk assessment methods/tools given in section 3 may be used for this evaluation.

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Consumer use; Adhesives, sealants (PC01)

**List of use descriptors** : **Identified use name: ES148:** Use in adhesives (”FEICA-UseR 21-”1, “FEICA-UseR 21-”2, “FEICA-UseR 21-”3) - Consumer: PC01; ERC08c, ERC08f
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c, ERC08f
**Market sector by type of chemical product:** PC01

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c
**Widespread use leading to inclusion into/onto article (outdoor) -** ERC08f

**Health Contributing scenarios** : **Sealants -** PC01
**Glues, hobby use -** PC01
**Carpet glue -** PC01

**Number of the ES** : 148

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling environmental exposure for 2: Widespread use leading to inclusion into/onto article (outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 3: Sealants**

**Product characteristics** : Covers concentrations up to 10%.

**Amounts used** : 390 g.

**Frequency and duration of use/exposure** : Covers use up to 20 times per year.
Covers exposure up to 4 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to fingertips.
Dermal transfer factor: 100%.

**Other given operational conditions affecting consumers exposure** : Covers use in room size of 20 m³.
10.0% fraction released to air.

**Contributing scenario controlling consumer exposure for 4: Glues, hobby use**

**Product characteristics** : Covers concentrations up to 10%.

**Amounts used** : 9 g.

**Frequency and duration of use/exposure** : Covers use up to 1 times per day. Covers exposure up to 4 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to fingertips.
Dermal transfer factor: 100%.

| | | |
|---|---|---|
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 m³.<br>10.0% fraction released to air. |

**Contributing scenario controlling consumer exposure for 5: Carpet glue**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 10%. |
| **Amounts used** | : | Inhalation: 9000 g. |
| **Frequency and duration of use/exposure** | : | Inhalation:<br>Exposure duration: 75 min.<br>Application duration: 75 min.<br>Use frequency: 10 times per year.<br><br>Dermal:<br>Exposure calculation result type: Internal dose chronic.<br>Use frequency: 10 times per year.<br>Release duration: 4500 sec. |
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed 110 cm².<br>contact rate: 30 mg/min. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 58 m³. Ventilation rate: 0.500 L/h.<br>Release temperature: 20 °C. Release area: 40000 cm².<br>Uptake fraction (dermal) 100%.<br>Mol. Weight Matrix: 3000 g/mole. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/ onto article (indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Environment: 2: Widespread use leading to inclusion into/ onto article (outdoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Consumers: 3: Sealants**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.032629 mg/kg bw/day.<br>Risk characterisation ratio: 0.006526.<br><br>**Consumer - inhalative, long-term - systemic:** 3.143 mg/m³.<br>Risk characterisation ratio: 0.722775.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.729301. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Consumers: 4: Glues, hobby use**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.595486 mg/kg bw/day.
Risk characterisation ratio: 0.119097.

**Consumer - inhalative, long-term - systemic:** 1.324 mg/m³.
Risk characterisation ratio: 0.3044.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.423497.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Consumers: 5: Carpet glue**

**Exposure assessment (human):** : ConsExpo

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.094837 mg/kg bw/day.
Risk characterisation ratio: 0.018967.

**Consumer - inhalative, long-term - systemic:** 4.194 mg/m³.
Risk characterisation ratio: 0.964478.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.983446.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : Not applicable.

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Consumer use; Adhesives, sealants (PC01)

**List of use descriptors** : **Identified use name: ES149:** Consumer solvent use, indoor ("FEICA-UseR 21-"14, "FEICA-UseR 21-"15) - Consumer: PC01; ERC08a
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC01

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Glues, hobby use -** PC01
**Tile glue - Application -** PC01

**Number of the ES** : 149

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Glues, hobby use**

**Product characteristics** : Covers concentrations up to 10%.

**Amounts used** : 9 g.

**Frequency and duration of use/exposure** : Covers use up to 1 times per day.
Covers exposure up to 4 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to fingertips.
Dermal transfer factor: 100%.

**Other given operational conditions affecting consumers exposure** : Covers use in room size of 20 m³.
10.0% fraction released to air.

**Contributing scenario controlling consumer exposure for 3: Tile glue - Application**

**Product characteristics** : Concentration of the substance in the mixture: 8%.
Mol. Weight Matrix: 3000 g/mole.

**Amounts used** : Inhalation: 15000 g

**Frequency and duration of use/exposure** : Inhalation:
Exposure calculation result type: Mean concentration yearly.
Frequency: 5 times per year.
Exposure duration: 360 min.
Application duration: 360 min.

Dermal:
Exposure calculation result type: Internal dose chronic.
Frequency: 5 times per year.
Release duration: 21600 sec.

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 430 cm².<br>contact rate: 30 mg/min. |
| **Other given operational conditions affecting consumers exposure** | : | Inhalation:<br>Room volume: 10 m³.<br>Ventilation rate: 2 1/hour(s).<br>Release area: 10000 cm².<br>Release temperature: 20 °C<br><br>Dermal:<br>Uptake fraction: 100%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Consumers: 2: Glues, hobby use**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.595486 mg/kg bw/day.<br>Risk characterisation ratio: 0.119097.<br><br>**Consumer - inhalative, long-term - systemic:** 1.324 mg/m³.<br>Risk characterisation ratio: 0.3044.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.423497. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Consumers: 3: Tile glue - Application**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | ConsExpo |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.182086 mg/kg bw/day.<br>Risk characterisation ratio: 0.036417.<br><br>**Consumer - inhalative, long-term - systemic:** 0.278742 mg/m³.<br>Risk characterisation ratio: 0.064108.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.100525. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | Not applicable. |

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Consumer use; Adhesives, sealants (PC01)

**List of use descriptors** : **Identified use name: ES150:** Consumer solvent use, outdoor ("FEICA-UseR 21-"17, "FEICA-UseR 21-"18) - Consumer: PC01; ERC08d
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08d
**Market sector by type of chemical product:** PC01

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) -** ERC08d

**Health Contributing scenarios** : **Glues, hobby use -** PC01
**Wood parquet glue - glued to surface - Application -** PC01

**Number of the ES** : 150

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Glues, hobby use**

**Product characteristics** : Covers concentrations up to 10%.

**Amounts used** : 9 g.

**Frequency and duration of use/exposure** : Covers use up to 1 times per day.
Covers exposure up to 4 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to fingertips.
Dermal transfer factor: 100%.

**Other given operational conditions affecting consumers exposure** : Covers use in room size of 20 $m^3$.
10.0% fraction released to air.

**Contributing scenario controlling consumer exposure for 3: Wood parquet glue - glued to surface - Application**

**Product characteristics** : Concentration of the substance in the mixture: 10%.
Mol. Weight Matrix: 3000 g/mole.

**Amounts used** : Inhalation: 22000 g

**Frequency and duration of use/exposure** : Inhalation:
Exposure calculation result type: Mean concentration yearly.
Frequency: 5 times per year.
Exposure duration: 480 min.
Application duration: 480 min.

Dermal:
Exposure calculation result type: Internal dose chronic.
Frequency: 5 times per year.
Release duration: 28800 sec.

| *hexanoic acid* | Exposure Scenario: 150 | ***Consumer use; Adhesives, sealants (PC01)*** |
|---|---|---|

| | | |
|---|---|---|
| **Human factors not influenced by risk management** | : | Exposed skin surface assumed: 430 cm².<br>contact rate: 30 mg/min. |
| **Other given operational conditions affecting consumers exposure** | : | Inhalation:<br>Room volume: 58 m³.<br>Ventilation rate: 0.5 1/hour(s).<br>Release area: 10000 cm².<br>Release temperature: 20 °C<br><br>Dermal:<br>Uptake fraction: 100%. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Consumers: 2: Glues, hobby use**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.595486 mg/kg bw/day.<br>Risk characterisation ratio: 0.119097.<br><br>**Consumer - inhalative, long-term - systemic:** 1.324 mg/m³.<br>Risk characterisation ratio: 0.3044.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.423497. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Consumers: 3: Wood parquet glue - glued to surface - Application**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | ConsExpo |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.303477 mg/kg bw/day.<br>Risk characterisation ratio: 0.060695.<br><br>**Consumer - inhalative, long-term - systemic:** 0.280682 mg/m³.<br>Risk characterisation ratio: 0.064554.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.12525. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | Not applicable. |

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Consumer use; Various products (PC03, PC31, PC35)

**List of use descriptors** : **Identified use name: ES151:** Consumer use in cleaning agents and maintenance products (incl. Air care products) (ECO 6) - Consumer: PC03, PC31, PC35; ERC08a
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08a
**Market sector by type of chemical product:** PC03, PC31, PC35

**Environmental contributing scenarios** : **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a

**Health Contributing scenarios** : **Air care products -** PC03
**Polishes and wax blends -** PC31
**Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) -** PC35
**Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) -** PC35

**Number of the ES** : 151

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Air care products**

**Product characteristics** : Inhalation:
Covers concentrations up to 50%.

Dermal:
Covers concentrations up to 10%.

**Amounts used** : 10 g.

**Frequency and duration of use/exposure** : Covers use up to 1 times per day.
Covers exposure up to 0.250 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to fingertips.
Dermal transfer factor: 100%.

**Other given operational conditions affecting consumers exposure** : Covers use in room size of 20 m³.
100% fraction released to air.

**Contributing scenario controlling consumer exposure for 3: Polishes and wax blends**

**Product characteristics** : Covers concentrations up to 50%.

**Amounts used** : 135 g.

**Frequency and duration of use/exposure** : Covers use up to 12 times per year.
Covers exposure up to 4 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to hands.
Dermal transfer factor: 100%.

| | |
|---|---|
| **Other given operational conditions affecting consumers exposure** | : Covers use in room size of 20 m³.<br>100% fraction released to air. |

**Contributing scenario controlling consumer exposure for 4: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)**

| | |
|---|---|
| **Product characteristics** | : Covers concentrations up to 5%. |
| **Amounts used** | : 5 g. |
| **Frequency and duration of use/exposure** | : Covers use up to 1 times per day.<br>Covers exposure up to 0.330 hours per event. |
| **Human factors not influenced by risk management** | : Assumes that potential dermal contact is limited to hands.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : Covers use in room size of 20 m³.<br>10% fraction released to air. |

**Contributing scenario controlling consumer exposure for 5: Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)**

| | |
|---|---|
| **Product characteristics** | : Covers concentrations up to 5%. |
| **Amounts used** | : 5 g. |
| **Frequency and duration of use/exposure** | : Covers use up to 52 times per year.<br>Covers exposure up to 4 hours per event. |
| **Human factors not influenced by risk management** | : Assumes that potential dermal contact is limited to hands.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : Covers use in room size of 20 m³.<br>100% fraction released to air. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | |
|---|---|
| **Exposure assessment (environment):** | : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : Not applicable. |

**Exposure estimation and reference to its source - Consumers: 2: Air care products**

| | |
|---|---|
| **Exposure assessment (human):** | : EASY TRA v3.5 |
| **Exposure estimation** | : **Consumer - dermal, long-term - systemic:** 0.005955 mg/kg bw/day.<br>Risk characterisation ratio: 0.001191.<br><br>**Consumer - inhalative, long-term - systemic:** 3.478 mg/m³.<br>Risk characterisation ratio: 0.799968.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.801159. |
| **Remark** | : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Consumers: 3: Polishes and wax blends**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.939726 mg/kg bw/day.
Risk characterisation ratio: 0.187945.

**Consumer - inhalative, long-term - systemic:** 0.966962 mg/m³.
Risk characterisation ratio: 0.222392.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.410338.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Consumers: 4: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.002 mg/kg bw/day.
Risk characterisation ratio: 0.0004.

**Consumer - inhalative, long-term - systemic:** 1.043 mg/m³.
Risk characterisation ratio: 0.239974.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.240374.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Consumers: 5: Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 1.018 mg/kg bw/day.
Risk characterisation ratio: 0.203607.

**Consumer - inhalative, long-term - systemic:** 0.523771 mg/m³.
Risk characterisation ratio: 0.120463.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.32407.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : Not applicable.

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

| | | |
|---|---|---|
| **Product definition** | : | Mono-constituent substance |
| **Product name** | : | hexanoic acid |

## Section 1 - Title

| | | |
|---|---|---|
| **Short title of the exposure scenario** | : | Consumer use; Various products (PC28, PC29, PC39) |
| **List of use descriptors** | : | **Identified use name: ES152:** Cosmetic Products and Pharmaceuticals (ECO 8) - Consumer: PC28, PC29, PC39; ERC08a<br>**Substance supplied to that use in form of:** In a mixture<br>**Subsequent service life relevant for that use:** No.<br>**Environmental Release Category:** ERC08a<br>**Market sector by type of chemical product:** PC28, PC29, PC39 |
| **Environmental contributing scenarios** | : | **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a |
| **Health Contributing scenarios** | : | **Perfumes, fragrances -** PC28<br>**Pharmaceuticals -** PC29<br>**Cosmetics, personal care products -** PC39 |
| **Number of the ES** | : | 152 |

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Perfumes, fragrances**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 2%. |
| **Amounts used** | : | 2 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 1 times per day.<br>Covers exposure up to 1 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact excludes feet, hands and head.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 m³.<br>10% fraction released to air. |

**Contributing scenario controlling consumer exposure for 3: Pharmaceuticals**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 2%. |
| **Amounts used** | : | 2 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 1 times per day.<br>Covers exposure up to 0.100 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact excludes feet, hands and head.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 m³.<br>10% fraction released to air. |

**Contributing scenario controlling consumer exposure for 4: Cosmetics, personal care products**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 2%. |
| **Amounts used** | : | 2 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 1 times per day.<br>Covers exposure up to 1 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact excludes feet, hands and head.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 m³.<br>10% fraction released to air. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Consumers: 2: Perfumes, fragrances**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 4.772 mg/kg bw/day.<br>Risk characterisation ratio: 0.954333.<br><br>**Consumer - inhalative, long-term - systemic:** 0.125 mg/m³.<br>Risk characterisation ratio: 0.028749.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.983082. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Consumers: 3: Pharmaceuticals**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 4.772 mg/kg bw/day.<br>Risk characterisation ratio: 0.954333.<br><br>**Consumer - inhalative, long-term - systemic:** 0.188679 mg/m³.<br>Risk characterisation ratio: 0.043394.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.997728. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

**Exposure estimation and reference to its source - Consumers: 4: Cosmetics, personal care products**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 4.772 mg/kg bw/day.<br>Risk characterisation ratio: 0.954333.<br><br>**Consumer - inhalative, long-term - systemic:** 0.125 mg/m³.<br>Risk characterisation ratio: 0.028749.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.983082. |

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 152 | ***Consumer use; Various products (PC28, PC29, PC39)*** |
| **Remark** | : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). | |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | |
|---|---|
| **General** | : Not applicable. |

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Consumer use; Artists Supply and Hobby preparations (PC05)

**List of use descriptors** : **Identified use name: ES153:** Consumer application of coatings or inks (CEPE AC0101, CEPE AC0102, CEPE AC0103, CEPE AC0104, CEPE AC0201, CEPE AC0202, CEPE AC0203, CEPE AC0204, CEPE AC0301 AC0401, CEPE AC0302 AC0402, CEPE AC0303 AC0403, CEPE AC0304 AC0404, CEPE AC0305 AC0405, CEPE AC0501, CEPE AC0601, CEPE AC0602, CEPE AC0603, CEPE AC0801, CEPE AC0802, CEPE AC0803) - Consumer: PC05; ERC08c
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC05

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **PC05 Artists Supply and Hobby preparations -** PC05

**Number of the ES** : 153

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: PC05 Artists Supply and Hobby preparations**

**Product characteristics** : Covers concentrations up to 5%.

**Amounts used** : 15 g.

**Frequency and duration of use/exposure** : Covers use up to 0.041096 times per day.
Covers exposure up to 1 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to hands.
Dermal transfer factor: 100%.

**Other given operational conditions affecting consumers exposure** : Covers use in room size of 20 m³.
10% fraction released to air.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Consumers: 2: PC05 Artists Supply and Hobby preparations**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.029366 mg/kg bw/day.
Risk characterisation ratio: 0.005873.

**Consumer - inhalative, long-term - systemic:** 0.096318 mg/m³.
Risk characterisation ratio: 0.022152.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.028026.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**General** : Not applicable.

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

| | | |
|---|---|---|
| **Product definition** | : | Mono-constituent substance |
| **Product name** | : | hexanoic acid |

## Section 1 - Title

| | | |
|---|---|---|
| **Short title of the exposure scenario** | : | Consumer use; Perfumes, fragrances (PC28) |
| **List of use descriptors** | : | **Identified use name: ES154:** Perfumes, fragrances (EM 80) - Consumer: PC28; ERC08c<br>**Substance supplied to that use in form of:** In a mixture<br>**Subsequent service life relevant for that use:** No.<br>**Environmental Release Category:** ERC08c<br>**Market sector by type of chemical product:** PC28 |
| **Environmental contributing scenarios** | : | **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c |
| **Health Contributing scenarios** | : | **Perfumes, fragrances -** PC28 |
| **Number of the ES** | : | 154 |

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Perfumes, fragrances**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 5%. |
| **Amounts used** | : | 15 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 1 times per day. Covers exposure up to 1 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact is limited to inside hands / one hand / palm of hands.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 $m^3$.<br>10% fraction released to air. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/onto article (indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Consumers: 2: Perfumes, fragrances**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.357292 mg/kg bw/day.<br>Risk characterisation ratio: 0.071458.<br><br>**Consumer - inhalative, long-term - systemic:** 3.538 mg/m³.<br>Risk characterisation ratio: 0.813647.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.885105. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | Not applicable. |

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

| | | |
|---|---|---|
| **Product definition** | : | Mono-constituent substance |
| **Product name** | : | hexanoic acid |

## Section 1 - Title

| | | |
|---|---|---|
| **Short title of the exposure scenario** | : | Consumer use; Biocidal products (PC08) |
| **List of use descriptors** | : | **Identified use name: ES155:** Consumer use of pest control products (AISE-C19) - Consumer: PC08; ERC08a<br>**Substance supplied to that use in form of:** In a mixture<br>**Subsequent service life relevant for that use:** No.<br>**Environmental Release Category:** ERC08a<br>**Market sector by type of chemical product:** PC08 |
| **Environmental contributing scenarios** | : | **Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) -** ERC08a |
| **Health Contributing scenarios** | : | **Biocidal products -** PC08 |
| **Number of the ES** | : | 155 |

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Biocidal products**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 5%. |
| **Amounts used** | : | 15 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 0.005479 times per day.<br>Covers exposure up to 1 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact is limited to hands.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 $m^3$.<br>10% fraction released to air. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Consumers: 2: Biocidal products**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.003916 mg/kg bw/day.<br>Risk characterisation ratio: 0.000783.<br><br>**Consumer - inhalative, long-term - systemic:** 0.012842 mg/m³.<br>Risk characterisation ratio: 0.002954.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.003737. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | Not applicable. |

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Consumer use; Plant protection products (PC27)

**List of use descriptors** : **Identified use name: ES156:** Plant protection products (EM 72) - Consumer: PC27; ERC08c
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC27

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Plant protection products -** PC27

**Number of the ES** : 156

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Plant protection products**

**Product characteristics** : Covers concentrations up to 5%.

**Amounts used** : 15 g.

**Frequency and duration of use/exposure** : Covers use up to 0.153425 times per day.
Covers exposure up to 1 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to hands.
Dermal transfer factor: 100%.

**Other given operational conditions affecting consumers exposure** : Covers use in room size of 20 $m^3$.
10% fraction released to air.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Consumers: 2: Plant protection products**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.109635 mg/kg bw/day.<br>Risk characterisation ratio: 0.021927.<br><br>**Consumer - inhalative, long-term - systemic:** 0.359589 mg/m³.<br>Risk characterisation ratio: 0.082702.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.104629. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | Not applicable. |

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Consumer use; Cosmetics, personal care products (PC39)

**List of use descriptors** : **Identified use name: ES157:** End use of cosmetic products (COLIPA U1) - Consumer: PC39; ERC08c
**Substance supplied to that use in form of:** In a mixture
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC08c
**Market sector by type of chemical product:** PC39

**Environmental contributing scenarios** : **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c

**Health Contributing scenarios** : **Cosmetics, personal care products -** PC39

**Number of the ES** : 157

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Cosmetics, personal care products**

**Product characteristics** : Covers concentrations up to 1.5%.

**Frequency and duration of use/exposure** : Covers use up to 1 times per day.

**Human factors not influenced by risk management** : Exposed skin surface assumed: Whole body.
Dermal transfer factor: 100%.

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/onto article (indoor)**

**Exposure assessment (environment):** : As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Exposure estimation** : Not applicable.

**Exposure estimation and reference to its source - Consumers: 2: Cosmetics, personal care products**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 4.375 mg/kg bw/day.
Risk characterisation ratio: 0.875.

**Consumer - inhalative, long-term - systemic:** - mg/m³.
Risk characterisation ratio: -.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.875.

| | | |
|---|---|---|
| ***hexanoic acid*** | Exposure Scenario: 157 | ***Consumer use; Cosmetics, personal care products (PC39)*** |
| **Remark** | : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). | |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | |
|---|---|
| **General** | : Not applicable. |

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

| | | |
|---|---|---|
| **Product definition** | : | Mono-constituent substance |
| **Product name** | : | hexanoic acid |

## Section 1 - Title

| | | |
|---|---|---|
| **Short title of the exposure scenario** | : | Consumer use; Adhesives, sealants (PC01) |
| **List of use descriptors** | : | **Identified use name: ES158:** Sealants (”FEICA-UseR 21-”13) - Consumer: PC01; ERC08c<br>**Substance supplied to that use in form of:** In a mixture<br>**Subsequent service life relevant for that use:** No.<br>**Environmental Release Category:** ERC08c<br>**Market sector by type of chemical product:** PC01 |
| **Environmental contributing scenarios** | : | **Widespread use leading to inclusion into/onto article (indoor) -** ERC08c |
| **Health Contributing scenarios** | : | **Sealants -** PC01 |
| **Number of the ES** | : | 158 |

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use leading to inclusion into/onto article (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Sealants**

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 10%. |
| **Amounts used** | : | 390 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 20 times per year.<br>Covers exposure up to 4 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact is limited to fingertips.<br>Dermal transfer factor : 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 $m^3$.<br>10.0% fraction released to air. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use leading to inclusion into/onto article (indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Consumers: 2: Sealants**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.032629 mg/kg bw/day.<br>Risk characterisation ratio: 0.006526.<br><br>**Consumer - inhalative, long-term - systemic:** 3.143 mg/m³.<br>Risk characterisation ratio: 0.722775.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.729301. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | Not applicable. |

## Annex to the extended Safety Data Sheet (eSDS)

**Consumer**

## Identification of the substance or mixture

**Product definition** : Mono-constituent substance

**Product name** : hexanoic acid

## Section 1 - Title

**Short title of the exposure scenario** : Service life - Consumer; Various articles (AC30, AC31, AC32, AC34, AC36)

**List of use descriptors** : **Identified use name: ES159:** Service Life of Scented Articles (ECO 9) - Service life - Consumers: AC30, AC31, AC32, AC34, AC36; ERC11b
**Subsequent service life relevant for that use:** No.
**Environmental Release Category:** ERC11b
**Article category related to subsequent service life:** AC31, AC32, AC34, AC36, AC30

**Environmental contributing scenarios** : **Widespread use of articles with high or intended release (indoor) -** ERC11b

**Health Contributing scenarios** : **Other articles with intend release of substances**
**Scented clothes**
**Scented eraser**
**Scented toys**
**Scented CD**

**Number of the ES** : 159

## Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 1: Widespread use of articles with high or intended release (indoor)**

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

**Contributing scenario controlling consumer exposure for 2: Other articles with intend release of substances**

AC30

**Product characteristics** : Covers concentrations up to 0.5%.

**Amounts used** : 2 g.

**Frequency and duration of use/exposure** : Covers use up to 0.273973 times per day.
Covers exposure up to 2 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to inside hands / one hand / palm of hands.
Dermal transfer factor: 100%.

**Other given operational conditions affecting consumers exposure** : Covers use in room size of 20 m³.
10% fraction released to air.

**Contributing scenario controlling consumer exposure for 3: Scented clothes**

AC31

**Product characteristics** : Covers concentrations up to 0.5%.

**Amounts used** : 2 g.

**Frequency and duration of use/exposure** : Covers use up to 1 times per day.
Covers exposure up to 12 hours per event.

**Human factors not influenced by risk management** : Assumes that potential dermal contact is limited to upper part of the body.
Dermal transfer factor : 100%.

| | | |
|---|---|---|
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 m³.<br>10% fraction released to air. |

**Contributing scenario controlling consumer exposure for 4: Scented eraser**

AC32

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 0.5%. |
| **Amounts used** | : | 2 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 1 times per day.<br>Covers exposure up to 0.5 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact is limited to fingertips.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 m³.<br>10% fraction released to air. |

**Contributing scenario controlling consumer exposure for 5: Scented toys**

AC34

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 0.5%. |
| **Amounts used** | : | 2 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 1 times per day.<br>Covers exposure up to 4 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact is limited to hands and forearms.<br>Assumes that potential oral skin area contact is limited to some fingertips.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 m³.<br>10% fraction released to air. |

**Contributing scenario controlling consumer exposure for 6: Scented CD**

AC36

| | | |
|---|---|---|
| **Product characteristics** | : | Covers concentrations up to 0.5%. |
| **Amounts used** | : | 2 g. |
| **Frequency and duration of use/exposure** | : | Covers use up to 0.013699 times per day.<br>Covers exposure up to 0.1 hours per event. |
| **Human factors not influenced by risk management** | : | Assumes that potential dermal contact is limited to inside hands / one hand / palm of hands.<br>Dermal transfer factor: 100%. |
| **Other given operational conditions affecting consumers exposure** | : | Covers use in room size of 20 m³.<br>10% fraction released to air. |

## Section 3 - Exposure estimation and reference to its source

**Exposure estimation and reference to its source - Environment: 1: Widespread use of articles with high or intended release (indoor)**

| | | |
|---|---|---|
| **Exposure assessment (environment):** | : | As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. |
| **Exposure estimation** | : | Not applicable. |

**Exposure estimation and reference to its source - Consumers: 2: Other articles with intend release of substances**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.009789 mg/kg bw/day.
Risk characterisation ratio: 0.001958.

**Consumer - inhalative, long-term - systemic:** 0.006227 mg/m³.
Risk characterisation ratio: 0.001432.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.00339.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Consumers: 3: Scented clothes**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.729167 mg/kg bw/day.
Risk characterisation ratio: 0.145833.

**Consumer - inhalative, long-term - systemic:** 0.006098 mg/m³.
Risk characterisation ratio: 0.001402.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.147236.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Consumers: 4: Scented eraser**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.002977 mg/kg bw/day.
Risk characterisation ratio: 0.000595.

**Consumer - inhalative, long-term - systemic:** 0.038462 mg/m³.
Risk characterisation ratio: 0.008846.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.009441.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Consumers: 5: Scented toys**

**Exposure assessment (human):** : EASY TRA v3.5

**Exposure estimation** : **Consumer - dermal, long-term - systemic:** 0.2784 mg/kg bw/day.
Risk characterisation ratio: 0.05568.

**Consumer - inhalative, long-term - systemic:** 0.014706 mg/m³.
Risk characterisation ratio: 0.003382.

**Consumer - oral, long-term - systemic:** 0.0053 mg/kg bw/day.
Risk characterisation ratio: 0.00212.

**Consumer - combined, long-term - systemic:**
Risk characterisation ratio: 0.061182.

**Remark** : Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1).

**Exposure estimation and reference to its source - Consumers: 6: Scented CD**

| | | |
|---|---|---|
| **Exposure assessment (human):** | : | EASY TRA v3.5 |
| **Exposure estimation** | : | **Consumer - dermal, long-term - systemic:** 0.000489 mg/kg bw/day.<br>Risk characterisation ratio: 0.000098.<br><br>**Consumer - inhalative, long-term - systemic:** 0.000646 mg/m³.<br>Risk characterisation ratio: 0.000149.<br><br>**Consumer - combined, long-term - systemic:**<br>Risk characterisation ratio: 0.000246. |
| **Remark** | : | Based on the applied RMMs the risk towards humans is sufficiently controlled (RCR < 1). |

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

| | | |
|---|---|---|
| **General** | : | Not applicable. |