

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

1.1. Product identifier

Product form	: Substance
Trade name	: RADIA MHKE
IUPAC name	: Nonan-2-one (methyl heptyl ketone)
EC no.	: 212-480-0
CAS No.	: 821-55-6
REACH registration No.	: 01-2120118577-52
C&L notification reference no	: 02-2119692975-16-0000
Label name	: Methyl heptyl ketone

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

Relevant identified uses

Main use category	: Industrial use
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Title	Life cycle stage	Use descriptors
General overview of industrial uses of ketones	Industrial	PC35, PROC1, PROC2, PROC4, PROC7, PROC8b, PROC10, PROC13, ERC4
General overview of professional uses of ketones	Professional	PC31, PC35, PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13, ERC8a
General overview of consumer uses of ketones	Consumer	PC0, PC3, PC8, PC31, PC35, PC39, ERC8a
General overview of manufacturing uses of ketones		PROC2, PROC3, PROC4, PROC8b, ERC1
General overview of formulation uses of ketones		PC0, PC28, PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15, PROC28, ERC2

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)
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Country/Area	Organisation/Company	Address	Emergency number	Comment
	World directory of poisons centres (Yellow Tox) 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 2 H315

Hazardous to the aquatic environment – Chronic Hazard, Category 3 H412

Category 3

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)



GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H315 - Causes skin irritation.

H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P264 - Wash hands, forearms and face thoroughly after handling.

P273 - Avoid release to the environment.

P280 - Wear protective clothing, eye protection, face protection.

P302+P352 - IF ON SKIN: Wash with plenty of water.

P332+P313 - If skin irritation occurs: Get medical advice/attention.

P501 - Dispose of contents and container to an approved waste disposal plant.

2.3. Other hazards

No additional information available

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]
Nonan-2-one (methyl heptyl ketone)	CAS No.: 821-55-6 EC no.: 212-480-0 REACH-no: 01-2120118577-52	100	Skin Irrit. 2, H315 Aquatic Chronic 3, H412

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	: If you feel unwell, seek medical advice.
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. If irritation persists, consult a doctor.
First-aid measures after eye contact	: Rinse immediately with plenty of water.
First-aid measures after ingestion	: Rinse mouth out with water. Get medical advice/attention if you feel unwell. 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.
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4.3. Indication of any immediate medical attention and special treatment needed

No supplementary information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

No additional information available

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Combustible. INDIRECT FIRE HAZARD: Heating may cause a fire or explosion. Temperature above flashpoint: higher fire/explosion hazard.
Explosion hazard	: No direct explosion hazard.

5.3. Advice for firefighters

Other information	: No supplementary information available.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Mark the danger area. Exposure to fire/heat: have neighbourhood close doors and windows. Exposure to fire/heat: consider evacuation. Wash contaminated clothing before reuse.
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6.2. Environmental precautions

No supplementary information available.

6.3. Methods and material for containment and cleaning up

Other information	: No supplementary information available.
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6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling temperature : $\geq 10\text{ }^{\circ}\text{C}$ above melting point

7.2. Conditions for safe storage, including any incompatibilities

Information on mixed storage : KEEP AWAY FROM: Acids. strong acids. bases. strong bases.
Storage area : Keep container in a well-ventilated place. Store at ambient temperature. Keep out of direct sunlight. Meet the legal requirements.
Special rules on packaging : Store in a closed container. Suitably labelled. Meet the legal requirements.
Packaging materials : No supplementary information available.

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. Protective clothing. Safety glasses.

Personal protective equipment symbol(s):



Skin protection

Other skin protection

Materials for protective clothing:

Good resistance: Nitrile rubber

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Colour : Colourless to light yellow.
Appearance (room temperature) : Liquid.
Molecular mass : 142.24 g/mol
Odour : Characteristic. Sweet odour.
Odour threshold : Not available
Melting point : $-9\text{ }^{\circ}\text{C}$
Freezing point : Not available
Boiling point : $195\text{ }^{\circ}\text{C}$
HMIS Flammability : Not available
Lower explosion limit : Not available

Upper explosion limit	: Not available
Flash point	: 78 °C
Auto-ignition temperature	: 315 °C (1015-1019hPa; EEC A.15; Henkel CSS; 15-17047; 12.2015)
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: ca. 1.34 mm ² /s
Viscosity, dynamic	: ca. 1.1 mPa·s (30°C)
Solubility	: Water: 167.3 mg/l (20°C; OECD105; Henkel CSS; 16-00798; 03.2016)
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: 3.4 (HPLC method; OECD 117 - EC A.8; Charles River; 515073; 06.2017)
Vapour pressure	: No supplementary information available
Vapour pressure at 50 °C	: Not available
Density	: 821 kg/m ³ (20°C)
Relative density	: 0.82
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

Other safety characteristics

VOC content	: 100 % (1999/13/EC; 2004/42/EC; 2010/75/EU; SR 814.018)
Other properties	: Insoluble in water, Soluble in oils/fats, Soluble in most organic solvents
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

RADIA MHKE (821-55-6)

LD50 oral rat	> 2000 mg/kg Non-toxic
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
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

RADIA MHKE (821-55-6)

Viscosity, kinematic	ca. 1.3 mm ² /s
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11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Ecology - air	: No supplementary information available.
Ecology - water	: No data available concerning bioaccumulation
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Harmful to aquatic life with long lasting effects.

RADIA MHKE (821-55-6)

EC50 - Crustacea [1]	9.7 mg/l (48h; OECD 202; Charles River; 515070; 06.2017)
EC50 72h - Algae [1]	8.9 mg/l (growth rate; OECD 201; Charles River; 515071; 09.2017)
EC50 72h - Algae [2]	3.1 mg/l (yield rate; OECD 201; Charles River; 515071; 09.2017)

12.2. Persistence and degradability

RADIA MHKE (821-55-6)

Persistence and degradability	Readily biodegradable, according to appropriate OECD test.
ThOD	2.92 g O ₂ /g substance
Biodegradation	> 60 % (28d.; OECD 301D; Charles River; 515074; 07.2017)

12.3. Bioaccumulative potential

RADIA MHKE (821-55-6)

Partition coefficient n-octanol/water (Log Pow)	3.4 (HPLC method; OECD 117 - EC A.8; Charles River; 515073; 06.2017)
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12.4. Mobility in soil

RADIA MHKE (821-55-6)

Ecology - soil	Biodegradability in soil: no data available.
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12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

RADIA MHKE (821-55-6)

Other information	No supplementary information available
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal	: Prevent dispersion by covering with dry absorbent, Scoop solid spill into closing containers, Scoop absorbed substance into closing containers, Clean contaminated surfaces with an excess of water and soap solution, Wash clothing and equipment after handling
Regional waste regulation	: No supplementary information available.
Ecological waste information	: Do not discharge into drains or the environment. Remove to an authorized waste treatment plant.
European List of Waste (LoW, EC 2000/532)	: No supplementary information available
HP Code	: HP4 - "Irritant – skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye. HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not applicable	Not applicable	Not applicable	UN 9003	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Transport document description				
Not applicable	Not applicable	Not applicable	UN 9003	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

ADR	IMDG	IATA	ADN	RID
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	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) : Not subject

Transport by sea

Transport regulations (IMDG) : Not subject

Air transport

Transport regulations (IATA) : Not subject

Inland waterway transport

No data available

Rail transport

Transport regulations (RID) : Not subject

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 % (1999/13/EC; 2004/42/EC; 2010/75/EU; 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_FDA, TR EAEU, TSCA

KKDIK number (Turkey) : 05-0000215046-27-0000

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. 7211).

VOC content : 100 % (1999/13/EC; 2004/42/EC; 2010/75/EU; SR 814.018)

Netherlands

ABM category : B(2) - toxic 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

Class for fire hazard : Class III-1

Store unit : 50 liter

Classification remarks : Flammable according to the Danish Ministry of Justice; Emergency management guidelines for the storage of flammable liquids must be followed

15.2. Chemical safety assessment

The chemical safety assessment has been carried out, an exposure scenario is not applicable (substance is not classified).

SECTION 16: Other information

Training advice : No supplementary information available.

Chemical inventories legend

: AICIS = Australian Inventory of Industrial Chemicals
DSL = Canadian Domestic Substances List
EU RECh = European Union REACH Regulation 1907/2006
IECSC = Inventory of Existing Chemicals Substances in China
INSQ = Mexico National Inventory of Chemical Substance
Japan ENCS = Japanese Existing Chemical Substances (ISHL)
Japan ISHL = Japanese Existing and New Chemical Substances (CSCL)
KECL = Korean Existing Chemical List
NCI = Vietnam National Chemical Inventory
NZIoC = New Zealand Inventory of Chemicals
PICCS = Philippines Inventory of Chemicals and Chemical Substances
TCSI = Taiwan Chemical Substance Inventory
TECL_FDA = Thailand Existing Chemicals Inventory - Food and Drug Administration List
TR EAEU = Eurasian Economic Union Unified list of chemicals
TSCA = USA Toxic Substances Control Act

SDS changed sections

: 15 - Regulatory information

SDS Reason for revision

: No supplementary information available

NFPA health hazard

: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

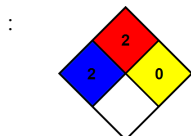
NFPA fire hazard

: 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures 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:

Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H315	Causes skin irritation.
H412	Harmful to aquatic life with long lasting effects.

Full text of use descriptors

ERC1	Manufacture of the substance
ERC2	Formulation into mixture
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC8a	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
PC0	Other
PC28	Perfumes, fragrances
PC3	Air care products
PC31	Polishes and wax blends
PC35	Washing and cleaning products
PC39	Cosmetics, personal care products

Full text of use descriptors

PC8	Biocidal products
PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC13	Treatment of articles by dipping and pouring
PROC14	Tabletting, compression, extrusion, pelettisation, granulation
PROC15	Use as laboratory reagent
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC28	Manual maintenance (cleaning and repair) of machinery
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
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)

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.