

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

### 1.1. Product identifier

Product form	: Substance
Trade name	: Nonene
Chemical name	: Nonene, branched
EC-No.	: 306-492-6
CAS-No.	: 97280-95-0
REACH registration No.	: 01-2119652778-22
Product code	: P501
Formula	: C9H18

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

#### 1.2.1. Relevant identified uses

Main use category	: Industrial use
Industrial/Professional use spec	: Distribution of substance
Use of the substance/mixture	: Manufacture of other chemical products Surfactants

#### 1.2.2. Uses advised against

No additional information available

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

Supplier (Only Representative):  
Braskem Netherland BV  
Weena 238-240, 9th Floor, Tower C  
NL - 3012 NJ – Rotterdam  
T +31 10 798 5002  
productsafety@braskem.com

### 1.4. Emergency telephone number

Emergency number : CHEMTREC+1 703-741-5970 (International – 24h)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Flammable liquids, Category 2	H225
Aspiration hazard, Category 1	H304
Hazardous to the aquatic environment – Acute	H400
Hazard, Category 1	
Hazardous to the aquatic environment – Chronic	H410
Hazard, Category 1	

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

#### Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Very toxic to aquatic life with long lasting effects. Handling this product may result in electrostatic accumulation. Use proper grounding procedures.

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### 2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP) : Danger

Hazard statements (CLP) : H225 - Highly flammable liquid and vapour.  
H304 - May be fatal if swallowed and enters airways.  
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P273 - Avoid release to the environment.  
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .  
P331 - Do NOT induce vomiting.  
P391 - Collect spillage.

EUH-statements : EUH066 - Repeated exposure may cause skin dryness or cracking.

### 2.3. Other hazards

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

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Nonene, branched	CAS-No.: 97280-95-0 EC-No.: 306-492-6 REACH-no: 01-2119652778-22	> 98	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Name	Product identifier	Specific Concentration Limits (SCL) Acute Toxicity Estimates (ATE) M-Factors
Nonene, branched	CAS-No.: 97280-95-0 EC-No.: 306-492-6 REACH-no: 01-2119652778-22	SCL – not applicable ATE – not applicable M-Factor acute M=1 M-Factor chronic M=1

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

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove victim to fresh air. Give oxygen or artificial respiration if necessary. Get immediate medical advice/attention.
First-aid measures after skin contact	: Rinse immediately with plenty of water for 15 minutes. Obtain medical attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Do NOT induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If necessary, drain stomach by gastric lavage ONLY under qualified medical supervision. Immediately call a POISON CENTER/doctor.

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

Symptoms/effects after inhalation	: Aspiration of this material may cause chemical pneumonia.
Symptoms/effects after skin contact	: Prolonged or repeated contact with the skin may cause dermatitis.
Symptoms/effects after eye contact	: Exposed may experience eye tearing, redness and discomfort.
Symptoms/effects after ingestion	: Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. May be fatal if swallowed and enters airways.

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

If necessary, drain stomach by gastric lavage ONLY under qualified medical supervision.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: For large fire: Foam. For small fire: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a water jet since it may cause the fire to spread. Do not use a heavy water stream.

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

Fire hazard	: Highly flammable liquid and vapour. Material can accumulate some static charge during transfer. Incomplete combustion may form carbon monoxide.
Explosion hazard	: May form flammable/explosive vapour-air mixture. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.

### 5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Fight fire from safe distance and protected location. Prevent fire fighting water from entering the environment.
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Protective equipment for firefighters	: Do not enter fire area without proper protective equipment, including respiratory protection. For large fire: Use self-contained breathing apparatus and chemically protective clothing. For small fire: Wear proper protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Other information	: If exposed to sufficient heat, may release sufficient gases (oxygen) to rupture containers violently. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.

### SECTION 6: Accidental release measures

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

General measures	: Stop leak if safe to do so. Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
<b>6.1.1. For non-emergency personnel</b>	
Protective equipment	: Wear suitable protective clothing. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Evacuate unnecessary personnel.
<b>6.1.2. For emergency responders</b>	
Protective equipment	: Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Evacuate unnecessary personnel. Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

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

For containment	: Cover spill with non combustible material, e.g.: sand, earth, vermiculite.
Methods for cleaning up	: Take up large spills with pump or vacuum. Use only non-sparking tools. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Put into a labelled container and provide safe disposal. Collect spillage. Store away from other materials.

#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed	: Handle empty containers with care because residual vapours are flammable. Handling this product may result in electrostatic accumulation. Use proper grounding procedures.
Precautions for safe handling	: Ground/bond container and receiving equipment. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection. Never use pressure to empty container. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. Use only non-sparking tools.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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

Technical measures	: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Ground equipment electrically. Keep away from sources of ignition. Avoid static electricity discharges. Provide adequate ventilation. Use explosion-proof ventilating equipment.
Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Incompatible materials. Keep in fireproof place. Keep container tightly closed.
Incompatible materials	: Strong oxidizing agents. Chlorine. Fluorine. magnesium perchlorate.
Packaging materials	: Carbon steel. Stainless steel.

### 7.3. Specific end use(s)

For further information see section 1.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 National occupational exposure and biological limit values

No additional information available

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

Nonene (97280-95-0)	
PNEC (Water)	
PNEC aqua (freshwater)	0,0053 mg/l
PNEC aqua (marine water)	0,0053 mg/l
PNEC aqua (intermittent, freshwater)	0,0053 mg/l
PNEC aqua (intermittent, marine water)	0,0053 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	3,3 mg/kg dwt
PNEC sediment (marine water)	3,3 mg/kg dwt
PNEC (Soil)	
PNEC soil	0,68 mg/kg dwt

#### 8.1.5. Control banding

No additional information available

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

##### Appropriate engineering controls:

Provide adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide proper grounding.

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### 8.2.2. Personal protection equipment

#### 8.2.2.1. Eye and face protection

##### Eye protection:

Chemical goggles or face shield with safety glasses

#### 8.2.2.2. Skin protection

##### Hand protection:

Impermeable protective gloves. Do not reuse gloves. It is recommended that the glove supplier be consulted to ensure the protective gloves are resistant to chemicals in this product

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves, E.g. KCL Type: 730 or 890 or equivalent	Nitrile, or, Viton	< 480 minutes.	0,4 / 0,7	Not known	EN 374

#### 8.2.2.3. Respiratory protection

##### Respiratory protection:

Approved organic vapour respirator. An approved organic vapour respirator/supplied air or self-contained breathing apparatus must be used when vapour concentration exceeds applicable exposure limits. Consult a national health and safety authority for further guidance

Respiratory protection			
Device	Filter type	Condition	Standard
Full face mask, with cartridge/filter	A	Concentrations exceed max allowed workplace atmospheric concentrations.	EN 14387

#### 8.2.2.4. Thermal hazards

No additional information available

### 8.2.3. Environmental exposure controls

##### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Colour	: Colourless.
Odour	: characteristic.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: 131.5 – 147 °C
Flammability	: Highly flammable liquid and vapour.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: 20 °C (Closed cup)
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available

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pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: Soluble in: Benzene. Water: Insoluble Ethanol: Soluble
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: 40 mm Hg (19 °C)
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: 0.734 - 0.745
Relative vapour density at 20°C	: 4,35
Particle characteristics	: Not applicable

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

Explosion limits : 0,8 – 3,9 vol %

#### 9.2.2. Other safety characteristics

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

### 10.2. Chemical stability

Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

### 10.3. Possibility of hazardous reactions

No polymerization. No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid ignition sources. Avoid static electricity discharges. Open flame. Direct sunlight.

### 10.5. Incompatible materials

Strong oxidizing agents. Chlorine. Fluorine. magnesium perchlorate.

### 10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature. On combustion, forms: carbon oxides (CO and CO<sub>2</sub>).

## SECTION 11: Toxicological information

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

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

#### Nonene (97280-95-0)

LD50 oral rat	> 5050 mg/kg
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Nonene (97280-95-0)	
LD50 dermal rat	> 2020 mg/kg
LC50 Inhalation - Rat (Vapours)	> 2,1 mg/l/4h

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)

Nonene (97280-95-0)	
NOAEL (animal/female, F0/P)	300 mg/kg bodyweight (rat, Inhalation)

STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: May be fatal if swallowed and enters airways.

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties	: None known
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#### 11.2.2. Other information

Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye
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## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water	: Very toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Very toxic to aquatic life with long lasting effects.

### 12.2. Persistence and degradability

Nonene (97280-95-0)	
Persistence and degradability	Readily biodegradable.

### 12.3. Bioaccumulative potential

Nonene (97280-95-0)	
Bioaccumulative potential	Potentially bioaccumulable.



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### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

#### Nonene (97280-95-0)

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

Results of PBT assessment

The data show that the properties of the substance do not meet the specific criteria detailed in Annex XIII or do not allow a direct comparison with all the criteria in Annex XIII but nevertheless indicate that the substance would not have these properties and the substance is not considered a PBT/vPvB.

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : None known.

### 12.7. Other adverse effects

Additional information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations. Dispose of contents/container in accordance with licensed collector's sorting instructions.






Product/Packaging disposal recommendations : Do not re-use empty containers. Dispose of in a safe manner in accordance with local/national regulations.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

## SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number or ID number</b>				
UN 2057	UN 2057	UN 2057	UN 2057	UN 2057
<b>14.2. UN proper shipping name</b>				
TRIPROPYLENE	TRIPROPYLENE	Tripropylene	TRIPROPYLENE	TRIPROPYLENE
<b>14.3. Transport hazard class(es)</b>				
3	3	3	3	3
				

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ADR	IMDG	IATA	ADN	RID
<b>14.4. Packing group</b>				
II	II	II	II	II
<b>14.5. Environmental hazards</b>				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes
No supplementary information available				

### 14.6. Special precautions for user

#### Overland transport

Classification code (ADR) : F1  
Limited quantities (ADR) : 1I  
Excepted quantities (ADR) : E2  
Packing instructions (ADR) : P001, IBC02, 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) : LGBF  
Vehicle for tank carriage : FL  
Transport category (ADR) : 2  
Special provisions for carriage - Operation (ADR) : S2, S20  
Hazard identification number (Kemler No.) : 33  
Orange plates :



Tunnel restriction code (ADR) : D/E

#### Transport by sea

Packing instructions (IMDG) : P001  
IBC packing instructions (IMDG) : IBC02  
Tank instructions (IMDG) : T4  
Tank special provisions (IMDG) : TP2  
EmS-No. (Fire) : F-E  
EmS-No. (Spillage) : S-D  
Stowage category (IMDG) : B  
Properties and observations (IMDG) : Colourless liquid. Immiscible with water.

#### Air transport

PCA Excepted quantities (IATA) : E2  
PCA Limited quantities (IATA) : Y341  
PCA limited quantity max net quantity (IATA) : 1L  
PCA packing instructions (IATA) : 353

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PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 364
CAO max net quantity (IATA)	: 60L
Special provisions (IATA)	: A3
ERG code (IATA)	: 3L

### Inland waterway transport

Classification code (ADN)	: F1
Limited quantities (ADN)	: 1 L
Excepted quantities (ADN)	: E2
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 1

### Rail transport

Classification code (RID)	: F1
Limited quantities (RID)	: 1L
Excepted quantities (RID)	: E2
Packing instructions (RID)	: P001, IBC02, 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)	: LGBF
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE7
Hazard identification number (RID)	: 33

### 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

#### 15.1.1. 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 (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

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### Explosives Precursors Regulation (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 (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)

### 15.1.2. National regulations

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

### Germany

Water hazard class (WGK) : Not classified according to Regulation Governing Systems for Handling Substances Hazardous to Waters (AwSV).

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

### Netherlands

SZW-lijst van kankerverwekkende stoffen : Nonene, branched is listed

SZW-lijst van mutagene stoffen : Nonene, branched is listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed

SZW-lijst van reprotoxische stoffen – : The substance is not listed

Vruchtbaarheid

SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

### Denmark

Class for fire hazard : Class I-1

Store unit : 1 liter

Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : Young people under 18 years are not allowed to use the product

### 15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out

## SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
3.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
3.1	Substances	Modified	
11.1.	NOAEL (animal/female, F0/P)	Added	
12.2	Persistence and degradability	Modified	
12.3	Bioaccumulative potential	Modified	

Other information : None.

Full text of H- and EUH-statements:	
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Asp. Tox. 1	Aspiration hazard, Category 1
EUH066	Repeated exposure may cause skin dryness or cracking.
Flam. Liq. 2	Flammable liquids, Category 2

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### Full text of H- and EUH-statements:

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

*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

### 1. Exposure scenario ES2

#### Distribution

ES Ref.: ES2

ES Type: Worker

Use descriptors	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15 SU3 ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7 ESVOC SPERC 1.1b.v1
Processes, tasks, activities covered	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, distribution and associated laboratory activities. Industrial use

### 2. Operational conditions and risk management measures

#### 2.2 Contributing scenario controlling environmental exposure (ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SPERC 1.1b.v1)

ERC1	Manufacture of substances
ERC2	Formulation of preparations
ERC3	Formulation in materials
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC5	Industrial use resulting in inclusion into or onto a matrix
ERC6a	Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b	Industrial use of reactive processing aids
ERC6c	Industrial use of monomers for manufacture of thermo-plastics
ERC6d	Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
ERC7	Industrial use of substances in closed systems
ESVOC SPERC 1.1b.v1	Distribution: Industrial (SU3)

#### Product characteristics

Physical form of product	liquid
Concentration of substance in product	100 %
Vapour pressure	Liquid, vapour pressure 0,5 - 10 kPa at STP.

#### Operational conditions

Amounts used	Regional use tonnage (tons/year):	1000
	Annual site tonnage (tons/year):	2
	Maximum daily site tonnage (kg/day):	6.67
	Fraction of EU tonnage used in region:	1
	Fraction of Regional tonnage used locally:	0.002
Frequency and duration of use	Emission days (days/year):	300
Environmental factors not influenced by risk management	Local freshwater dilution factor:	10
	Local marine water dilution factor:	100

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Other given operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM):	0.001
	Release fraction to wastewater from process (initial release prior to RMM):	0.000001
	Release fraction to soil from process (initial release prior to RMM):	0.00001

### Risk Management Measures

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Risk from environmental exposure is driven by soil., Prevent discharge of undissolved substance to or recover from onsite wastewater.	
	Treat air emission to provide a typical removal efficiency of (%):	90
	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ... <sup>3</sup> (%):	97.2
Organisational measures to prevent/limit release from site	Do not apply industrial sludge to natural soils., Sludge should be incinerated, contained or reclaimed.	
Conditions and measures related to municipal sewage treatment plant	Assumed domestic sewage treatment plant flow (m3/d):	2000
	Estimated substance removal from wastewater via on-site sewage treatment (%):	97.2
	Maximum allowable site tonnage (MSafe) (kg/d):	14563
Conditions and measures related to external treatment of waste for disposal	Sludge should be incinerated, contained or reclaimed.	
Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations.	

### 2.1 Contributing scenario controlling worker exposure

#### Product characteristics

Physical form of product	liquid
Concentration of substance in product	100 %
Vapour pressure	Liquid, vapour pressure 0,5 - 10 kPa at STP.

#### Operational conditions

Amounts used	Covers percentage substance in the product up to 100 % (unless stated differently).	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Human factors not influenced by risk management	Not applicable	
Other given operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.	

### Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance.	(general measures)
Conditions and measures related to personal protection, hygiene and health evaluation	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. wash off any skin contamination immediately. provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.	(general measures for skin irritants)

## 3. Exposure estimation and reference to its source

### 3.1. Health

### 3.2. Environment

Information for contributing exposure scenario
ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7
ESVOC SPERC 1.1b.v1

# Nonene

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

environmental exposure	Unit	Exposure Estimation	PNEC	RCR	Assessment method
freshwater	mg/l	0.00000105	0.0053	0.000198	Used EUSES model.
marine water	mg/l	0.0000001	0.0053	0.0000194	Used EUSES model.
freshwater sediment	mg/kg dwt	0.00014	3.3	0.000195	Used EUSES model.
Marine water sediment	mg/kg dwt	0.0000137	3.3	0.0000191	Used EUSES model.
Sewage treatment plant		0.00000936			Used EUSES model.
Soil	mg/kg dwt	0.000275	0.68	0.000458	Used EUSES model.

### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

#### 4.1. Health

Guidance - Health	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
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#### 4.2. Environment

Guidance - Environment	When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.,Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.,Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.,Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.,Further details on scaling and control technologies are provided in SpERC factsheet ( <a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a> ).
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Safety Data Sheet (SDS), EU - Braskem

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. It warns that the handling of any chemical substance requires the previous knowledge of its hazards for the user. It is up to the user of the product company providing this SDS to and promote the training of its employees about possible risks come upon of the product. The information contained herein is not absolute, but only general information on the use of the chemical and indication of safety and security measures.