

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878 Reference number: SDS-271023-1 Issue date: 10/27/2023 Version: 1.0

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

1.1. Product identifier

Product form Substance

Trade name Rare earth doped upconversion nanoparticles

Product code

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

1.2.1. Relevant identified uses

: Industrial use, Professional use Main use category

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Sabancı Üniversitesi Nanoteknoloji Araştırma ve Uygulama Merkezi (SUNUM)

Orta Mah. Üniversite Cad. No: 27/1

34956 Tuzla - İstanbul

Türkiye

T +90 (216) 483 9000 - F +90 (216) 483 9885

sunum@sabanciuniv.edu - https://sunum.sabanciuniv.edu/

1.4. Emergency telephone number

No additional information available

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 Skin corrosion/irritation, Category 2 H315 Specific target organ toxicity - Single exposure, Category 3, H336

Aspiration hazard, Category 1 H304 Hazardous to the aquatic environment – Acute Hazard, H400 Category 1

Hazardous to the aquatic environment - Chronic Hazard, H410

Category 1

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

Adverse physicochemical, human health and environmental effects

May cause drowsiness or dizziness. Causes skin irritation. May be fatal if swallowed and enters airways. Very toxic to aquatic life with long lasting effects. Highly flammable liquid and vapour.

2.2. Label elements

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

Hazard pictograms (CLP)





GHS07





GHS08

GHS09

Signal word (CLP)

Hazard statements (CLP) : H225 - Highly flammable liquid and vapour.

H304 - May be fatal if swallowed and enters airways.

Safety Data Sheet

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

H315 - Causes skin irritation.

H336 - May cause drowsiness or dizziness.

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.

P261 - Avoid breathing vapours.

P264 - Wash hands, forearms and face thoroughly after handling

P280 - Wear protective gloves, protective clothing, eye protection, face protection. P301+P310+P331 - IF SWALLOWED: Immediately call a POISON CENTER, a doctor. Do

NOT induce vomiting. P391 - Collect spillage.

Extra phrases : This product is not to be used under conditions of poor ventilation.

This product is not to be used for carpet laying.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
cyclohexane	CAS-No.: 110-82-7 EC-No.: 203-806-2 EC Index-No.: 601-017-00-1	90 – 100	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : In all cases of doubt, or when symptoms persist, seek medical attention. Call a physician

immediately.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : If skin irritation occurs: Get medical advice/attention. Rinse skin with water/shower. Take off

immediately all contaminated clothing.

First-aid measures after eye contact : Rinse eyes with water as a precaution.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Do not induce vomiting. Call a

physician immediately.

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

Symptoms/effects : May cause drowsiness or dizziness.

Symptoms/effects after skin contact : Irritation.

Symptoms/effects after ingestion : Risk of lung oedema.

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

Treat symptomatically.

10/27/2023 (Issue date) EU - en 2/12

Safety Data Sheet

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Contact with combustible material may cause fire. Highly flammable liquid and vapour.

Explosion hazard : Risk of explosion if heated under confinement.

Hazardous decomposition products in case of fire : On heating or during combustion : Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : Keep away from combustible materials. Keep container closed when not in use. Approach

from upwind.

Firefighting instructions : Exercise caution when fighting any chemical fire. Keep upwind. Do not enter fire area

without proper protective equipment, including respiratory protection. Eliminate all ignition sources if safe to do so. Contain the extinguishing fluids by bunding.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained

breathing apparatus. Complete protective clothing.

Other information : Do not allow run-off from fire fighting to enter drains or water courses. Notify authorities if product enters sewers or public waters. High temperature decomposition products are

harmful by inhalation. Inhalation of vapour can cause breathing difficulties.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Keep public away from danger area.

6.1.1. For non-emergency personnel

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

Emergency procedures : Ventilate spillage area. Do not touch or walk on the spilled product. Notify fire brigade and environmental authorities. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact

with skin and eyes. No open flames, no sparks, and no smoking.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information

refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Evacuate unnecessary personnel. Equip cleanup crew with proper protection. Stop leak if

safe to do so. Prevent from entering sewers, basements and workpits, or any place where

its accumulation can be dangerous.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Do not touch or walk on the spilled product. Collect spillage.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.

Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

10/27/2023 (Issue date) EU - en 3/12

Safety Data Sheet

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Use only

outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

Flammable vapours may accumulate in the container. Use explosion-proof equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the

product. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Keep only in the original container in a cool well ventilated place. Store locked up. Store in a

well-ventilated place. Keep container tightly closed. Keep cool.

Incompatible products : Strong acids. Strong bases. Strong oxidizing agents.

Incompatible materials : Extremely high or low temperatures.

Heat and ignition sources : Keep away from heat and direct sunlight. Keep away from sources of ignition.

Information on mixed storage : Keep away from food, drink and animal feeding stuffs.

Storage area : Store, if possible, in a cool, well ventilated place away from incompatible materials.

7.3. Specific end use(s)

See Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

cyclohexane (110-82-7)		
EU - Indicative Occupational Exposure Limit (IOEL)		
Local name Cyclohexane		
IOEL TWA	700 mg/m³	
IOEL TWA [ppm] 200 ppm		
Regulatory reference COMMISSION DIRECTIVE 2006/15/EC		

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

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

10/27/2023 (Issue date) EU - en 4/12

Safety Data Sheet

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

8.2.2. Personal protection equipment

Personal protective equipment:

Protective clothing. Wear respiratory protection.

Personal protective equipment symbol(s):









8.2.2.1. Eye and face protection

Eye protection:

Safety glasses. Use splash goggles when eye contact due to splashing is possible. In case of dust production: protective goggles

8.2.2.2. Skin protection

Skin and body protection:

According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn

Hand protection:

Protective gloves. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. The breakthrough time of the selected gloves must be greater than the intended use period. Gloves must be replaced after each use and whenever signs of wear or perforation appear

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : Colourless. Transparent.

Appearance : Clear liquid.

Odour : Not available

Odour threshold : Not available

Melting point : Not applicable

Freezing point : Not available

Boiling point : Not available

Flammability : Highly flammable liquid and vapour.

: Not available Lower explosion limit Upper explosion limit : Not available Flash point : -20 °C closed cup Auto-ignition temperature : Not available Decomposition temperature : Not available : Not available sViscosity, kinematic : Not available Solubility : Not available : Not available Partition coefficient n-octanol/water (Log Kow) : Not available Vapour pressure : Not available Vapour pressure at 50°C : Not available Density : Not available Relative density : Not available Relative vapour density at 20°C Particle characteristics : Not applicable

10/27/2023 (Issue date) EU - en 5/12

Safety Data Sheet

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

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on	hazard classes as d	efined in Regulation	(FC) 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)

cyclohexane (110-82-7)			
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Remarks on results: other:		
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:		
LC50 Inhalation - Rat	> 32.88 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Remarks on results: other:		
Skin corrosion/irritation	: Causes skin irritation.		
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)		

Skin corrosion/irritation	: Causes skin irritation.
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)
STOT-single exposure	: May cause drowsiness or dizziness.

3 .	•
cyclohexane (110-82-7)	
STOT-single exposure	May cause drowsiness or dizziness.
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.

Safety Data Sheet

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

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short-term : Very toxic to aquatic life.

Hazardous to the aquatic environment, long-term : Very toxic to aquatic life with long lasting effects.

(chronic)

Not rapidly degradable

cyclohexane (110-82-7)	
LC50 - Fish [1]	4.53 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	0.9 mg/l Test organisms (species): Daphnia magna

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

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

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Additional information

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions. Product/Packaging disposal recommendations

: Completely empty the packaging prior to decontamination. Recycle the material as far as

possible. Comply with local regulations for disposal. : Flammable vapours may accumulate in the container.

Ecology - waste materials : Avoid release to the environment.

10/27/2023 (Issue date) EU - en 7/12

Safety Data Sheet

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

HP Code

- : HP3 "Flammable:"
 - flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C;
 - flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;
 - flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction;
 - flammable gaseous waste: gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
 - water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities;
 - other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.
 - HP5 "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.
 - 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								
UN 1145	UN 1145	UN 1145	UN 1145	UN 1145				
14.2. UN proper shippin	g name							
CYCLOHEXANE	CYCLOHEXANE	Cyclohexane	CYCLOHEXANE	CYCLOHEXANE				
Transport document descr	iption							
UN 1145 CYCLOHEXANE, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS	UN 1145 CYCLOHEXANE, 3, II, MARINE POLLUTANT/ENVIRONME NTALLY HAZARDOUS (- 18°C c.c.)	UN 1145 Cyclohexane, 3, II, ENVIRONMENTALLY HAZARDOUS	UN 1145 CYCLOHEXANE, 3, II, ENVIRONMENTALLY HAZARDOUS	UN 1145 CYCLOHEXANE, 3, II, ENVIRONMENTALLY HAZARDOUS				
14.3. Transport hazard o	class(es)							
3	3	3	3	3				
3	3	1 1 1 1 1 1 1 1 1 1	3	3				
14.4. Packing group	14.4. Packing group							
II	II	II	II	II				
14.5. Environmental hazards								
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

10/27/2023 (Issue date) EU - en 8/12

Safety Data Sheet

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

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 : TP1

(ADR)

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 :

33 1145

Tunnel restriction code (ADR) : D/E

Transport by sea

Limited quantities (IMDG) : 1 L Excepted quantities (IMDG) E2 Packing instructions (IMDG) P001 IBC packing instructions (IMDG) IBC02 Tank instructions (IMDG) T4 Tank special provisions (IMDG) TP1 EmS-No. (Fire) : F-E : S-D EmS-No. (Spillage) Stowage category (IMDG) : E Flash point (IMDG) : -18°C c.c.

Properties and observations (IMDG) : Colourless, mobile liquid with a sweet aromatic odour. Flashpoint: -18°C c.c. Explosive

limits: 1.2% to 8.4% Immiscible with water. Slightly irritating to skin, eyes and mucous

membranes. Narcotic in high concentrations.

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

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 : TP1

(RID)

Tank codes for RID tanks (RID) : LGBF

10/27/2023 (Issue date) EU - en 9/12

Safety Data Sheet

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

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)

EU restriction list (REACH Annex XVII)			
Reference code Applicable on Entry title or description			
57.	cyclohexane	Cyclohexane	

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 applicable.

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

Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG).

Observe restrictions according Act on the Protection of Young People in Employment

(JArbSchG).

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

Hazardous to Waters (AwSV).

Storage class (LGK, TRGS 510) : LGK 3 - Flammable liquids.

Joint storage table

:	LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
	LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
	LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
	LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
	LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for : LGK 1, LGK 2A, LGK 4.1A, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1A, LGK 5.1C, LGK 5.2,

LGK 6.1B, LGK 6.2, LGK 7.

Joint storage with restrictions permitted for : LGK 5.1B, LGK 6.1D, LGK 11, LGK 10-13.

Joint storage permitted for : LGK 2B, LGK 3, LGK 6.1A, LGK 6.1C, LGK 8A, LGK 8B, LGK 10, LGK 12, LGK 13.

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

10/27/2023 (Issue date) EU - en 10/12

Safety Data Sheet

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

Denmark

Class for fire hazard : Add boilingpoint Store unit : Add boilingpoint

Classification remarks : Add boilingpoint; Emergency management guidelines for the storage of flammable liquids

must be followed

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

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:		
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road	
ATE	Acute Toxicity Estimate	
BCF	Bioconcentration factor	
BLV	Biological limit value	
BOD	Biochemical oxygen demand (BOD)	
COD	Chemical oxygen demand (COD)	
DMEL	Derived Minimal Effect level	
DNEL	Derived-No Effect Level	
EC-No.	European Community number	
EC50	Median effective concentration	
EN	European Standard	
IARC	International Agency for Research on Cancer	
IATA	International Air Transport Association	
IMDG	International Maritime Dangerous Goods	
LC50	Median lethal concentration	
LD50	Median lethal dose	
LOAEL	Lowest Observed Adverse Effect Level	
NOAEC	No-Observed Adverse Effect Concentration	
NOAEL	No-Observed Adverse Effect Level	
NOEC	No-Observed Effect Concentration	
OECD	Organisation for Economic Co-operation and Development	
OEL	Occupational Exposure Limit	
PBT	Persistent Bioaccumulative Toxic	
PNEC	Predicted No-Effect Concentration	
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail	
SDS	Safety Data Sheet	
STP	Sewage treatment plant	
ThOD	Theoretical oxygen demand (ThOD)	
TLM	Median Tolerance Limit	

Safety Data Sheet

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

Abbreviations and acronyms:		
VOC	Volatile Organic Compounds	
CAS-No.	Chemical Abstract Service number	
N.O.S.	Not Otherwise Specified	
vPvB	Very Persistent and Very Bioaccumulative	
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008	
IOELV	Indicative Occupational Exposure Limit Value	
Pow (log)	n-octanol/water partition coefficient	
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006	
WGK	Water Hazard Class	

Data sources

: Classification according to Regulation (EC) No. 1272/2008 [CLP]. ECHA (European Chemicals Agency). Supplier's safety documents.

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	
Flam. Liq. 2	Flammable liquids, Category 2	
H225	Highly flammable liquid and vapour.	
H304	May be fatal if swallowed and enters airways.	
H315	Causes skin irritation.	
H336	May cause drowsiness or dizziness.	
H400	Very toxic to aquatic life.	
H410	Very toxic to aquatic life with long lasting effects.	
Skin Irrit. 2	Skin corrosion/irritation, Category 2	
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis	

The classification complies with

: ATP 12

Safety Data Sheet (SDS), EU

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable

10/27/2023 (Issue date) EU - en 12/12