

Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Epox Ripresa C.B

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

Intended use

water emulsified reactive epoxy adhesive for construction joints.

Uses advised against

Usò al consumo

1.3 Details of the supplier of the safety data sheet

Company name	TORGGLER S.R.L.
Full address	Via Prati Nuovi 9
Town	Marlengo
Postal code	39020
Province	BZ
Country	Italy
Phone number	+39 0473 282400
Fax	+39 0473 282501
e-mail address of the competent person responsible for the Safety Data Sheet	reach@torggler.com

1.4 Emergency telephone number

For urgent inquiries refer to +39 348 662 70 93 (08.00 - 17.30)

Section 2 Hazards identification

2.1 Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification

Skin irritation, category 2	H315	Causes skin irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Eye irritation, category 2	H319	Causes serious eye irritation.
Reproductive toxicity, category 1B	H360F	May damage fertility.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic to aquatic life with long lasting effects.

2.2 Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms



Section 2

Signal word

Danger

Hazard statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H360F	May damage fertility.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P308+P313	IF exposed or concerned: Get medical advice / attention.
P391	Collect spillage.
P273	Avoid release to the environment.
P261	Avoid breathing mist, spray, vapours.
P280	Wear protective gloves / protective clothing / eye protection / face protection.

Contains

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

2.3 Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage $\geq$ than 0,1%.
The product does not contain substances with endocrine disrupting properties in concentration $\geq$ 0.1%.

Section 3 Composition/information on ingredients

Mixture of liquid epoxy resin and reactive thinner.

3.2 Mixtures**2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane**

Concentration	$76 \leq x < 92 \%$
CAS number	1675-54-3
EC number	216-823-5
INDEX number	603-073-00-2
Registration Number	01-2119456619-26-xxxx
Hazard classification	- Skin Irrit. 2; H315 - Skin Sens. 1; H317 - Eye Irrit. 2; H319 - Aquatic Chronic 2; H411
Specific concentration limits	- Skin Irrit. 2; H315: $\geq 5 \%$ - Eye Irrit. 2; H319: $\geq 5 \%$

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

Concentration	$18 \leq x < 28.1 \%$
CAS number	68609-97-2
EC number	271-846-8
INDEX number	603-103-00-4
Registration Number	01-21194852289-22-xxxx
Hazard classification	- Skin Irrit. 2; H315 - Skin Sens. 1; H317 - Repr. 1B; H360F

Section 3

The full wording of hazard (H) phrases is given in section 16 of the sheet.

Section 4 First aid measures

4.1 Description of first aid measures

In case of doubt or in the presence of symptoms contact a doctor and show him this document.

In case of more severe symptoms, ask for immediate medical aid.

EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Take off immediately all contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.

INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Do not give anything by mouth to an unconscious person. Get medical advice/attention.

INHALATION: Remove victim to fresh air, away from the accident scene. In the event of respiratory symptoms (coughing, wheezing, breathing difficulty, asthma) keep the victim in a comfortable position for breathing. If necessary administer oxygen. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

Rescuers protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

4.2 Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

DELAYED EFFECTS: Based on the information currently available, there are no known cases of delayed effects following exposure to this product.

4.3 Indication of any immediate medical attention and special treatment needed

IF exposed or concerned: Get medical advice / attention.

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

Section 5 Firefighting measures

5.1 Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2 Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

5.3 Advice for firefighters

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

Section 6

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2 Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3 Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4 Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

Section 7 Handling and storage

7.1 Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2 Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany)

6.1C – Combustible substances of acute toxicity, category 3 (hazardous substances that are toxic or produce chronic effects)

Applicable technical instruction according to Royal Decree 656/2017:

Classification	Storage in fixed containers	Storage in mobile containers
▪ H411 – Aquatic Chronic 2 ▪ H360F – Repr. 1B ▪ H317 – Skin Sens. 1 ▪ H315 – Skin Irrit. 2 ▪ H319 – Eye Irrit. 2	Not applicable	MIE APQ-10 – Storage in mobile containers

Respect the joint storage conditions established in Royal Decree 656/2017.

7.3 Specific end use(s)

Information not available.

Section 8

Section 8 Exposure controls/personal protection

8.1 Control parameters

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

Predicted no-effect concentration - PNEC

Normal value of STP microorganisms	10 mg/l
Normal value in fresh water	1.12 mg/l
Normal value for fresh water sediment	1.05 mg/kg/d
Normal value in marine water	0.112 mg/l
Normal value for marine water sediment	0.105 mg/kg/d
Normal value for the terrestrial compartment	20 mg/kg/d

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, long-term, dermal		0.089 mg/kg bw/d
Consumers, long-term, inhalation		0.087 mg/m ³
Consumers, long-term, oral		0.05 mg/kg bw/d
Workers, long-term, dermal		0.75 mg/kg/d
Workers, long-term, inhalation		0.49 mg/m ³

2,2' -[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Predicted no-effect concentration - PNEC

Normal value of STP microorganisms	10 mg/l
Normal value in fresh water	0.006 mg/l
Normal value for fresh water sediment	0.341 mg/kg/d
Normal value in marine water	0.0006 mg/l
Normal value for marine water sediment	0.0341 mg/kg/d
Normal value for the terrestrial compartment	0.0647 mg/kg/d
Normal value for the food chain (secondary poisoning)	
Normal value for water, intermittent release	0.018 mg/l

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Workers, long-term, dermal		0.75 mg/kg/d
Workers, long-term, inhalation		4.93 mg/m ³

8.2 Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

When choosing risk management measures and operating conditions, consult the exposure scenarios attached.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344/EN ISO 13034).

Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

Section 8

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a type AX filter, whose limit of use will be defined by the manufacturer (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

Section 9 Physical and chemical properties
9.1 Information on basic physical and chemical properties

Physical state	liquid	
Colour	transparent	
Odour	mild	
Odour threshold	Not applicable	
Melting point / freezing point	Not available	
Initial boiling point	> 35 °C (> 95 °F)	
Flammability	not flammable	
Lower explosive limit	Not available	
Upper explosive limit	Not available	
Flash point	> 60 °C (> 140 °F)	
Auto-ignition temperature	Not available	
Decomposition temperature	Not available	
pH	not soluble in water	
Kinematic viscosity	Not available	
Dynamic viscosity	0.54 Pl	Temperature: 25 °C (77 °F) Method: UNI EN 12092:2003
Solubility	soluble in organic solvents	
Partition coefficient: n-octanol/water	Not available	
Vapour pressure	Not available	
Density and/or relative density	1.1 kg/l	Temperature: 20 °C (68 °F) Method: DIN 51757
Relative vapour density	Not available	

Particle characteristics

Information not available.

9.2 Other information
9.2.1 Information with regard to physical hazards

Information not available.

9.2.2 Other safety characteristics

Total solids	100.00 %	Temperature: 250 °C (482 °F)
VOC (Directive 2010/75/EU)	0.00 % – 0 g/l	

Section 10

Section 10 Stability and reactivity

10.1 Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

10.2 Chemical stability

The product is stable in normal conditions of use and storage.

10.3 Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

10.4 Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

Heat, direct sunlight.
Avoid frost.

10.5 Incompatible materials

Amines, Strong oxidizing agents, Strong reducing agents, Strong acids, Strong bases, phenols.

10.6 Hazardous decomposition products

Information not available.

Section 11 Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

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

11.1.1 Metabolism, toxicokinetics, mechanism of action and other information

Information not available.

11.1.2 Information on likely routes of exposure

Information not available.

11.1.3 Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available.

11.1.4 Interactive effects

Information not available.

11.1.5 ACUTE TOXICITY

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

LD50 (Oral):	> 2,000 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	> 4,000 mg/kg	Species/guidelines: Rabbit

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LC50 (Inhalation vapours):	> 0.15 mg/l	Exposure duration: 4 hours Species/guidelines: Rat
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2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

LD50 (Oral):	> 2,000 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	> 2,000 mg/kg	Species/guidelines: Rat

11.1.6 SKIN CORROSION/IRRITATION

Causes skin irritation.

11.1.7 SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation.

11.1.8 RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

11.1.9 GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

11.1.10 CARCINOGENICITY

Does not meet the classification criteria for this hazard class

11.1.11 REPRODUCTIVE TOXICITY

May damage fertility.

11.1.12 STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

11.1.13 STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

11.1.14 ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2 Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

Section 12 Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1 Toxicity**oxirane, mono[(C12-14-alkyloxy)methyl] derivs.**

EC50 - for Crustacea	> 7.2 mg/l	Exposure duration: 48 hours Species/guidelines: Daphnia magna
LC50 - for Fish	> 100 mg/l	Exposure duration: 96 hours Species/guidelines: Fish
EC50 - for Algae / Aquatic Plants	843.75 mg/l	Exposure duration: 72 hours
Chronic NOEC for Crustacea	56 mg/l	Species/guidelines: Daphnia magna

Section 12

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

EC50 - for Crustacea	2.7 mg/l	Exposure duration: 48 hours Species/guidelines: Daphnia magna
LC50 - for Fish	1.5 mg/l	Exposure duration: 96 hours Species/guidelines: Oncorhynchus mykiss
EC50 - for Algae / Aquatic Plants	9.4 mg/l	Exposure duration: 72 hours Species/guidelines: freshwater algae
Chronic NOEC for Crustacea	0.3 mg/l	Species/guidelines: Daphnia

12.2 Persistence and degradability**oxirane, mono[(C12-14-alkyloxy)methyl] derivs.**

Degradability	Rapidly degradable
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2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Degradability	NOT rapidly degradable
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12.3 Bioaccumulative potential**oxirane, mono[(C12-14-alkyloxy)methyl] derivs.**

Bioconcentration factor	670.5
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2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Bioconcentration factor	31
Partition coefficient n-octanol/water	3 LogKow

12.4 Mobility in soil**2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane**

Partition coefficient soil/water	2.65 LogKoc
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12.5 Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage $\geq$ than 0,1%.

12.6 Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7 Other adverse effects

Information not available.

Section 13 Disposal considerations

EWC: 080409.

13.1 Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

The management of waste arising from the use or dispersal of this product must be organised in accordance with occupational safety regulations. See section 8 for possible need for PPE.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

Section 13

Hazardous waste classification - Reg. (UE) 1357/2014

HP 4 – Irritant — skin irritation and eye damage

HP 10 – Toxic for reproduction

HP 13 – Sensitising

HP 14 – Ecotoxic

Section 14 Transport information**14.1 UN number or ID number**

ADR / RID	IMDG	IATA
UN 3082	UN 3082	UN 3082

- In accordance with Special Provision 375, this product, when is packed in receptacles of a capacity $\leq$ 5Kg or 5L, is not submitted to ADR provisions.
- In accordance with Special Provision 375, this product, when is packed in receptacles of a capacity $\leq$ 5Kg or 5L, is not submitted to IMDG Code provisions.
- In accordance with SP A197, this product, when is packed in receptacles of a capacity $\leq$ 5Kg or 5L, is not submitted to IATA dangerous goods regulations.

14.2 UN proper shipping name

ADR / RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)

14.3 Transport hazard class(es)

	Class	Label
ADR / RID	9	9
IMDG	9	9
IATA	9	9

**14.4 Packing group**

ADR / RID	IMDG	IATA
III	III	III

14.5 Environmental hazards

ADR / RID	Environmentally Hazardous
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Section 14

IMDG	Marine Pollutant	
IATA	Environmentally Hazardous	

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

14.6 Special precautions for user

ADR / RID			
Hazard identification No. - Kemler	90	Limited Quantities	5 L
Tunnel restriction code	(-)	Special provisions	274, 335, 375, 601, 650
IMDG			
EmS	F-A, S-F	Limited Quantities	
IATA			
Maximum quantity (Cargo)	450 L	Packaging instructions (Cargo)	964
Maximum quantity (Passengers)	450 L	Packaging instructions (Passengers)	964
Special provisions	A97, A158, A197, A215		

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

Seveso Category - Directive 2012/18/EU:

E2

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

	Restrictions	Registration Number EU
Product restrictions	3	
Contained substance		
	75	

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

Not applicable

Substances in Candidate List (Art. 59 REACH)

Registration Number EU

On the basis of available data, the product does not contain any SVHC in percentage $\geq$ than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

Authorisation
Number

Sunset date

Registration Number EU

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

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Substances subject to the Stockholm Convention:

None

Regulation (EU) 2019/1021 - on persistent organic pollutants

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK2 – Hazard to waters

15.2 Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

Section 16 Other information
Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
Eye Irrit. 2	Eye irritation, category 2
Repr. 1B	Reproductive toxicity, category 1B
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H360F	May damage fertility.
H411	Toxic to aquatic life with long lasting effects.

Legend

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EC50: Effective concentration (required to induce a 50% effect)
- EC: Identifier in ESIS (European archive of existing substances)
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.

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Legend

- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

General Bibliography

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I ATP CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II ATP CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III ATP CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV ATP CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V ATP CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI ATP CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII ATP CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII ATP CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX ATP CLP)
13. Regulation (EU) 2017/776 (X ATP CLP)
14. Regulation (EU) 2018/669 (XI ATP CLP)
15. Regulation (EU) 2019/521 (XII ATP CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII ATP CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (EU) 2020/217 (XIV ATP CLP)
19. Delegated Regulation (EU) 2020/1182 (XV ATP CLP)
20. Delegated Regulation (EU) 2021/643 (XVI ATP CLP)
21. Delegated Regulation (EU) 2021/849 (XVII ATP CLP)
22. Delegated Regulation (EU) 2022/692 (XVIII ATP CLP)
23. Delegated Regulation (EU) 2023/707
24. Delegated Regulation (EU) 2023/1434 (XIX ATP CLP)
25. Delegated Regulation (EU) 2023/1435 (XX ATP CLP)
26. Delegated Regulation (EU) 2024/197 (XXI ATP CLP)
27. Delegated Regulation (EU) 2024/2564 (XXII ATP CLP)
28. Regulation (EU) 2024/2865
29. Delegated Regulation (EU) 2025/1222 (XXIII ATP CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Calculation methods for classification

Section 16

Chemical and physical hazards:

Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards:

Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards:

Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes from the previous revision

This SDS has been prepared with a different software from the one previous revision. The new calculation does not allow us to identify all the differences compared to the previous version. We therefore recommend carefully reviewing all 16 sections of the SDS. We remain available to provide any clarification regarding the content or the changes made compared to the previous version, which is available to professional or industrial users.