

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

Intended use

Hybrid polymer-based adhesive with high initial adhesion, for bonding many building materials, porous and non-porous, in construction, industry and nautical.

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)
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Section 2 Hazards identification

2.1 Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements).

However, since the product contains hazardous substances in concentrations such as to be declared in section 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2020/878.

Hazard classification

None

2.2 Label elements

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

Hazard pictograms

None

Signal word

None

Hazard statements

None

Precautionary statements

None

Section 2

Supplementary hazard statements

EUH208	Contains • trimethoxyvinylsilane. May produce an allergic reaction.
EUH210	Safety data sheet available on request.

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%.

Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing. May be harmful in contact with skin.

Section 3 Composition/information on ingredients

Mixture based on hybrid polymers.

3.2 Mixtures

trimethoxyvinylsilane

Concentration	$0.58 \leq x < 1 \%$
CAS number	2768-02-7
EC number	220-449-8
INDEX number	014-049-00-0
Registration Number	01-2119513215-52-xxxx
Hazard classification	- Flam. Liq. 3; H226 - Skin Sens. 1B; H317 - Acute Tox. 4; H332

QUARTZ

Concentration	$0.073 \leq x < 1 \%$
CAS number	14808-60-7
EC number	238-878-4
Hazard classification	STOT RE 1; H372
Substance with a community workplace exposure limit.	

METHANOL

Concentration	$0.00072 \leq x < 0.00312 \%$
CAS number	67-56-1
EC number	200-659-6
INDEX number	603-001-00-X
Registration Number	01-2119433307-44-xxxx
Hazard classification	- Flam. Liq. 2; H225 - Acute Tox. 3; H301 - Acute Tox. 3; H311 - Acute Tox. 3; H331 - STOT SE 1; H370
Specific concentration limits	STOT SE 2; H371: $\geq 3 \%$
Substance with a community workplace exposure limit.	

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

No effects requiring implementation of special first aid measures are expected. The following information represents practical indications of correct behaviour in the event of contact with a chemical product, even if not hazardous.
In case of doubt or in the presence of symptoms contact a doctor and show him this document.

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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 contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice. 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. 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.

4.3 Indication of any immediate medical attention and special treatment needed

If symptoms occur, whether acute or delayed, consult a doctor.

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

Running water for skin and eye wash.

Treat symptomatically. Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing.

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 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

Section 6

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

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. Avoid leakage of the product into the environment.

7.2 Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany)

None

Applicable technical instruction according to Royal Decree 656/2017:

Classification	Storage in fixed containers	Storage in mobile containers
	MIE APQ-1 – Storage of flammable and combustible liquids in fixed containers	Not applicable

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

Protect against moisture. Store at a temperature between +10 and +35 °C. Store away from food or feed and beverages.

7.3 Specific end use(s)

Adhesives and/or sealants.

Section 8 Exposure controls/personal protection

8.1 Control parameters

Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing
Methanol (CAS 67-56-1): (EU) TWA: 200 ppm

Regulatory references

ACGIH	ACGIH 2026
European Union-OEL	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.
Ireland-OELV	2020 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations (2001-2015) and the Safety, Health and Welfare at Work (Carcinogens) Regulations (2001-2019)

Section 8

Regulatory references

Malta-TLV	PROTECTION OF THE HEALTH AND SAFETY OF WORKERS FROM THE RISKS RELATED TO CHEMICAL AGENTS AT WORK REGULATIONS (S.L.424.24). PROTECTION OF WORKERS FROM THE RISKS RELATED TO EXPOSURE TO CARCINOGENS OR MUTAGENS AT WORK REGULATIONS (S.L.424.22)
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QUARTZ

	TWA		STEL		CEILING		Remarks	
	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm		
ACGIH	0.025						Respiratory	
European Union-OEL	0.1						Respiratory	
Ireland-OELV	0.1						Respiratory	
Ireland-OELV	0.1						--	
Malta-TLV	0.1						Respiratory	As Silica

METHANOL

	TWA		STEL		CEILING		Remarks	
	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm		
ACGIH	262	200	328	250			Skin	
European Union-OEL	260	200					Skin	
European Union-OEL	260	200					--	
Ireland-OELV	260	200					Skin	
Malta-TLV	260	200					Skin	

Predicted no-effect concentration - PNEC

Normal value of STP microorganisms	100 mg/l
Normal value in fresh water	154 mg/l
Normal value for fresh water sediment	570.4 mg/kg
Normal value in marine water	15.4 mg/l
Normal value for the terrestrial compartment	23.5 mg/kg
Normal value for water, intermittent release	1,540 mg/l

Health - Derived no-effect level - DNEL / DMEL**Local effect****Systemic effect**

Workers, short-term, dermal	Not available	40 mg/kg/d
Workers, short-term, inhalation	260 mg/m ³	260 mg/m ³
Workers, long-term, dermal	Not available	40 mg/kg/d
Workers, long-term, inhalation	260 mg/m ³	260 mg/m ³

trimethoxyvinylsilane**Predicted no-effect concentration - PNEC**

Normal value of STP microorganisms	6.6 mg/l
Normal value in fresh water	0.4 mg/l
Normal value for fresh water sediment	1.5 mg/kg/d
Normal value in marine water	0.04 mg/l
Normal value for marine water sediment	0.15 mg/kg/d
Normal value for the terrestrial compartment	0.06 mg/kg/d
Normal value for water, intermittent release	2.4 mg/l

Health - Derived no-effect level - DNEL / DMEL**Local effect****Systemic effect**

Consumers, long-term, dermal		7.8 mg/kg bw/d
Consumers, long-term, inhalation		18.9 mg/m ³
Consumers, long-term, oral		0.3 mg/kg bw/d
Workers, long-term, dermal		3.9 mg/kg bw/d
Workers, long-term, inhalation		27.6 mg/m ³

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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.

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.

Protect your hands with gloves of the following type:

Protect your hands with gloves of the following type

Material	Thickness	Breakthrough time
Nitrile rubber (NBR) –	0.7 mm Glove thickness must be selected based on the minimum required breakthrough time.	480 min Glove resistance depends on various elements, such as temperature and other environmental factors.
Butyl rubber (IIR) –	0.7 mm Glove thickness must be selected based on the minimum required breakthrough time.	480 min Glove resistance depends on various elements, such as temperature and other environmental factors.

SKIN PROTECTION

Wear category I 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).

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.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	pasty liquid	Temperature: 23 °C (73.4 °F)
Colour	white	
Odour	characteristic	
Odour threshold	Not applicable	
Melting point / freezing point	Not available	
Initial boiling point	> 35 °C (> 95 °F)	
Flammability	Not applicable	
Lower explosive limit	Not available	
Upper explosive limit	Not available	

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Flash point	> 60 °C (> 140 °F)	
Auto-ignition temperature	Not available	
Decomposition temperature	Not available	
pH	not soluble in water	
Kinematic viscosity	> 20.5 mm ² /s	
Solubility	immiscible with water	
Partition coefficient: n-octanol/water	Not available	
Vapour pressure	Not available	
Density and/or relative density	1.57 g/cm ³	Temperature: 23 °C (73.4 °F)
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	45.68 %	Temperature: 250 °C (482 °F)
VOC (Directive 2010/75/EU)	0.83 % – 13 g/l	
Kinematic viscosity (40 °C)	>0.5 m ² /s	

Section 10 Stability and reactivity

10.1 Reactivity

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

Product cures with moisture.

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.

Product cures with moisture. Protect from moisture. Exposure to air or moisture over prolonged periods. Do not freeze. Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Information not available.

10.6 Hazardous decomposition products

None under normal use conditions. Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing.

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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

METHANOL

WORKERS: inhalation; contact with the skin.

POPULATION: ingestion of contaminated food or water; contact with the skin of products containing the substance.

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

METHANOL

The minimum lethal dose for humans by ingestion is considered to be in the range from 300 to 1000 mg/kg. Ingestion of 4-10 ml of the substance may cause permanent blindness in adult humans (IPCS).

11.1.4 Interactive effects

Information not available.

11.1.5 ACUTE TOXICITY

METHANOL

LC50 (Inhalation vapours):	> 87.6 mg/l	Exposure duration: 4 hours Species/guidelines: Rat
ATE (Oral)	100 mg/kg	estimate from table 3.1.2 of Annex I of the CLP
ATE (Dermal)	300 mg/kg	estimate from table 3.1.2 of Annex I of the CLP
ATE (Inhalation - vapours)	3 mg/l	estimate from table 3.1.2 of Annex I of the CLP

trimethoxyvinylsilane

LD50 (Oral):	6,899 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	3,158 mg/kg	Species/guidelines: Rabbit
LC50 (Inhalation vapours):	2,773	Exposure duration: 4 hours Species/guidelines: Rat
ATE (Inhalation - vapours)	11 mg/l	estimate from table 3.1.2 of Annex I of the CLP

11.1.6 SKIN CORROSION/IRRITATION

Does not meet the classification criteria for this hazard class

Test report – Study code: E-20/21/GLP Skin Sensitisation (OECD 429) "5wt% vinyltrimethoxysilane (CAS. 2768-02-7) in MS Polymer":
The results of the analysis demonstrate that 5 wt% vinyltrimethoxysilane (CAS No. 2768-02-7) in MS Polymer is not considered a skin sensitizer under the conditions of the LLNA study.

11.1.7 SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

11.1.8 RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

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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

Does not meet the classification criteria for this hazard class

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
Viscosity:

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

METHANOL

EC50 - for Crustacea	> 10,000 mg/l	Exposure duration: 48 hours Species/guidelines: Daphnia magna
LC50 - for Fish	15,400 mg/l	Exposure duration: 96 hours Species/guidelines: Lepomis macrochirus

trimethoxyvinylsilane

EC50 - for Crustacea	168.7 mg/l	Exposure duration: 48 hours Species/guidelines: Daphnia magna
LC50 - for Fish	191 mg/l	Exposure duration: 96 hours Species/guidelines: Oncorhynchus mykiss
EC50 - for Algae / Aquatic Plants	89 mg/l	Exposure duration: 72 hours Species/guidelines: Selenestrum capricornutum
Chronic NOEC for Fish	100 mg/l	Species/guidelines: Oncorhynchus mykiss
Chronic NOEC for Crustacea	28 mg/l	Species/guidelines: Daphnia magna

12.2 Persistence and degradability

METHANOL

Solubility in water	$1,000 \leq x \leq 10,000$ mg/l
Degradability	Rapidly degradable

Section 12

trimethoxyvinylsilane

Degradability	NOT rapidly degradable
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12.3 Bioaccumulative potential

METHANOL

Bioconcentration factor	0.2
Partition coefficient n-octanol/water	-0.77 LogKow

12.4 Mobility in soil

Information not available.

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: 080410.

13.1 Waste treatment methods

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
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.

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

None

Section 14 Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1 UN number or ID number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

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14.4 Packing group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

Not applicable

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:**

None

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

	Restrictions	Registration Number EU
Product restrictions	40	
Contained substance		
	75	
DIISONONYL PHTHALATE	52	01-2119430798-28-xxxx
Silicic acid (H ₄ SiO ₄), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane	20	01-2120753666-44-xxxx

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

Not applicable

Substances in Candidate List (Art. 59 REACH)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

Substances subject to the Stockholm Convention:

None

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

None

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

WGK1 – Low hazard to waters

Section 15

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:

Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Skin Sens. 1B	Skin sensitization, category 1B
STOT RE 1	Specific target organ toxicity - repeated exposure, category 1
STOT SE 1	Specific target organ toxicity - single exposure, category 1
STOT SE 2	Specific target organ toxicity - single exposure, category 2
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H370	Causes damage to organs.
H371	May cause damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.

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.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very persistent and very bioaccumulative

Section 16

Legend

- 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

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.

Section 16

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.