Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878

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

1.1 Product identifier

Product name	Xtreme Grip Vinylester C.A

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

Intended use
Vinyl ester resin-based chemical anchor

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 is given in sections 11 and 12 of this sheet.

Hazard classification		
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.

2.2 Label elements

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

Hazard pictograms



Signal word

Warning

Hazard statements	
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

Precautionary statements	
P271	Use only outdoors or in a well-ventilated area.
P405	Store locked up.
P501	Dispose of contents and container in accordance with local and national regulations.
P102	Keep out of reach of children.
P280	Wear protective gloves.
P101	If medical advice is needed, have product container or label at hand.

Contains
ethylene dimethacrylate
Methacrylic acid, monoester with propane-1,2-diol

2.3 Other hazards

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

Section 3 Composition/information on ingredients

3.2 Mixtures

ethylene dimethacrylate

Concentration	26.9 ≤ x < 41 %
CAS number	97-90-5
EC number	202-617-2
INDEX number	607-114-00-5
Registration Number	01-2119965172-38-xxxx
Hazard classification	▪ Skin Sens. 1; H317 ▪ STOT SE 3; H335
Specific concentration limits	▪ STOT SE 3; H335: ≥ 10 %
Classification note according to Annex VI to the CLP Regulation:	D

Methacrylic acid, monoester with propane-1,2-diol

Concentration	5.5 ≤ x < 10 %
CAS number	27813-02-1
EC number	248-666-3
Registration Number	01-2119490226-37-xxxx
Hazard classification	▪ Skin Sens. 1; H317 ▪ Eye Irrit. 2; H319

1,1'-(p-tolimin)dipropan-2-ol

Concentration	0.15 ≤ x < 0.65 %
CAS number	38668-48-3
EC number	254-075-1
Registration Number	01-2119980937-17-xxxx
Hazard classification	▪ Acute Tox. 2; H300 ▪ Eye Irrit. 2; H319 ▪ Aquatic Chronic 3; H412
LD50 (Oral):	25 mg/kg

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 skin irritation or rash occurs: 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 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)
None

Applicable technical instruction according to Royal Decree 656/2017:

Classification	**Storage in fixed containers**	**Storage in mobile containers**
▪ H317 – Skin Sens. 1 ▪ H335 – STOT SE 3	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 Exposure controls/personal protection

8.1 Control parameters

ethylene dimethacrylate

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	57 mg/l
Normal value in fresh water	0.139 mg/l

Section 8

Predicted no-effect concentration - PNEC	
Normal value for fresh water sediment	1.6 mg/kg/d
Normal value in marine water	0.0139 mg/l
Normal value for marine water sediment	0.16 mg/kg/d
Normal value for the terrestrial compartment	0.239 mg/kg/d
Normal value for water, intermittent release	0.15 mg/l

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, long-term, dermal		0.83 mg/kg bw/d
Consumers, long-term, inhalation		1.45 mg/m³
Consumers, long-term, oral		0.83 mg/kg bw/d
Workers, long-term, dermal		1.3 mg/kg bw/d
Workers, long-term, inhalation		2.45 mg/m³

Methacrylic acid, monoester with propane-1,2-diol

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	10 mg/l
Normal value in fresh water	0.904 mg/l
Normal value for fresh water sediment	6.28 mg/kg/d
Normal value in marine water	0.904 mg/l
Normal value for marine water sediment	6.28 mg/kg/d
Normal value for the terrestrial compartment	0.727 mg/kg/d
Normal value for water, intermittent release	0.972 mg/l

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, long-term, dermal		2.5 mg/kg bw/d
Consumers, long-term, inhalation		8.8 mg/m³
Consumers, long-term, oral		2.5 mg/kg bw/d
Workers, long-term, dermal		4.2 mg/kg bw/d
Workers, long-term, inhalation		14.7 mg/m³

1,1'-(p-tolimin)dipropan-2-ol

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	199.5 mg/l
Normal value in fresh water	0.017 mg/l
Normal value for fresh water sediment	0.163 mg/kg/d
Normal value in marine water	0.0017 mg/l
Normal value for marine water sediment	0.0163 mg/kg/d
Normal value for the terrestrial compartment	0.0226 mg/kg/d
Normal value for water, intermittent release	0.17 mg/l

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, long-term, oral		0.25 mg/kg bw/d
Workers, long-term, dermal		0.7 mg/kg bw/d
Workers, long-term, inhalation		2.47 mg/m³

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.

Section 8

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) The following should be considered when choosing work glove material: compatibility, degradation, permeability time.	**0.4 mm** –	**480 min** –

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).

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	
Colour	cream	
Odour	characteristic	
Odour threshold	Not applicable	
Melting point / freezing point	Not available	
Initial boiling point	> 35 °C (> 95 °F)	
Flammability	Not available	
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	> 20.5 mm^2/s	Temperature: 40 °C (104 °F)
Solubility	insoluble in water	
Partition coefficient: n-octanol/water	Not available	
Vapour pressure	Not available	
Density and/or relative density	1.6 ≤ x ≤ 1.8 kg/l	
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	0 %	Temperature: 250 °C (482 °F)

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.

10.5 Incompatible materials

Information not available.

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.

Section 11

11.1.4 Interactive effects

Information not available.

11.1.5 ACUTE TOXICITY

ATE (Inhalation) of the mixture	Not classified (no significant component)
ATE (Oral) of the mixture	> 2,000 mg/kg
ATE (Dermal) of the mixture	Not classified (no significant component)

ethylene dimethacrylate

LD50 (Oral):	8,300 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	2,000 mg/kg	Species/guidelines: Rat

Methacrylic acid, monoester with propane-1,2-diol

LD50 (Oral):	2,000 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	5,000 mg/kg	Species/guidelines: Rat

1,1'-(p-tolimin)dipropan-2-ol

LD50 (Oral):	25 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	2,000 mg/kg	Species/guidelines: Rat

11.1.6 SKIN CORROSION/IRRITATION

Does not meet the classification criteria for this hazard class

11.1.7 SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

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

Does not meet the classification criteria for this hazard class

11.1.12 STOT - SINGLE EXPOSURE

May cause respiratory irritation.

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

ethylene dimethacrylate

EC50 - for Crustacea	44.9 mg/l	Exposure duration: 48 hours
LC50 - for Fish	15.95 mg/l	Exposure duration: 96 hours
EC50 - for Algae / Aquatic Plants	17.3 mg/l	Exposure duration: 72 hours
Chronic NOEC for Crustacea	7.22 mg/l	
Chronic NOEC for Algae / Aquatic Plants	6.93 mg/l	Species/guidelines: freshwater algae

Methacrylic acid, monoester with propane-1,2-diol

EC50 - for Crustacea	143 mg/l	Exposure duration: 48 hours Species/guidelines: freshwater invertebrates
LC50 - for Fish	493 mg/l	Exposure duration: 96 hours Species/guidelines: freskwater fish
EC50 - for Algae / Aquatic Plants	97.2 mg/l	Exposure duration: 72 hours Species/guidelines: freshwater algae
Chronic NOEC for Crustacea	45.2 mg/l	Species/guidelines: freshwater invertebrates

1,1'-(p-tolimin)dipropan-2-ol

EC50 - for Crustacea	28 mg/l	Exposure duration: 48 hours Species/guidelines: freshwater invertebrates
LC50 - for Fish	17 mg/l	Exposure duration: 96 hours Species/guidelines: freshwater fish
EC50 - for Algae / Aquatic Plants	245 mg/l	Exposure duration: 72 hours Species/guidelines: freshwater algae
Chronic NOEC for Algae / Aquatic Plants	57.8 mg/l	Species/guidelines: freshwater algae

12.2 Persistence and degradability

Methacrylic acid, monoester with propane-1,2-diol

Solubility in water	130 g/l	
Degradability	Rapidly degradable	

1,1'-(p-tolimin)dipropan-2-ol

Solubility in water	7 g/l	
Degradability	Inherently degradable	

12.3 Bioaccumulative potential

Methacrylic acid, monoester with propane-1,2-diol

Partition coefficient n-octanol/water	0.97 LogKow

1,1'-(p-tolimin)dipropan-2-ol

Partition coefficient n-octanol/water	2.1 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 ≥ 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

EER 080410 - Hindu product; 080409 - product not hardened.

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.
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.

Directive 2008/98/EC (waste)
For the disposal of waste from this material, the hazard characteristics shall be assessed in accordance with Directive 2008/98/EC. Any transboundary shipment must comply with Regulation (EU) 2024/1157.

Hazardous waste classification - Reg. (UE) 1357/2014
HP 5 – Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP 6 – Acute Toxicity
HP 13 – Sensitising

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

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

Not applicable

Section 14

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	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 ≥ 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

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.

Notification Art. 45 CLP

The mixture may not have been notified in all EU Member States. In the event of resale in a country other than the one in which it was purchased, contact the supplier to verify any applicable obligations.

Regulation (EU) 2024/590 – Substances that deplete the ozone layer

Annex I. Contains:	Annex II. Contains:
None	None

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

WGK1 – Low hazard to waters

Denmark - MAL code - Executive Order No. 301 of 13 May 1993
n.a.

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. 2	Acute toxicity, category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
Eye Irrit. 2	Eye irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
STOT SE 3	Specific target organ toxicity - single exposure, category 3
H300	Fatal if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H412	Harmful 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.
- 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)

General Bibliography

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.

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.