Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 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

UFI: **WE1H-V0UK-H000-QX6Q**

Product name **PSF+ Comp. A Chemofast**

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

Intended use **Adhesive mortar for fasteners component A (resin)**

Identified Uses	Industrial	Professional	Consumer
Adhesive mortar for fasteners	-	✔	-

1.3. Details of the supplier of the safety data sheet

Name	Vorpa Srl
Full address	Via San Leo,5
District and Country	47838 Riccione - RIMINI
	Tel. +39 - 0541 607111
	Fax +39 - 0541 699015
	www.vorpa.com
e-mail address of the competent person	
responsible for the Safety Data Sheet	vorpa@vorpa.com

1.4. Emergency telephone number

For urgent inquiries refer to Tel. +39 - 0541 607111 (office hours)

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 and indication:

Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful 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:

Signal words:	Warning
Hazard statements:	
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.
Precautionary statements:	
P280	Wear protective gloves.
P261	Avoid breathing dust / fume / gas / mist / vapours / spray.
P333+P313	If skin irritation or rash occurs: Get medical advice / attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P273	Avoid release to the environment.
Contains:	hydroxypropyl Tetramethylene dimethacrylate Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and Ethanol, 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-

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

3.1. Substances

Information not relevant

3.2. Mixtures

Contains:

Identification	**x = Conc. %**	**Classification (EC) 1272/2008 (CLP)**
Tetramethylene dimethacrylate		
INDEX -	5 ≤ x < 15	Skin Sens. 1B H317
EC 218-218-1		
CAS 2082-81-7		
REACH Reg. 01-2119967414-30		
Vinyltoluene		
INDEX -	1 ≤ x < 6	Flam. Liq. 3 H226, Skin Irrit. 2 H315, Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411
EC 246-562-2		
CAS 25013-15-4		
REACH Reg. 01-21196222074-50-		

XXXX **hydroxypropyl**		
INDEX -	2 ≤ x < 2,5	Eye Irrit. 2 H319, Skin Sens. 1 H317
EC 248-666-3		
CAS 27813-02-1		
REACH Reg. 01-2119490226-37-XXXX		
1,1 '- (p-tolylimino) dipropan-2-ol		
INDEX -	0,1 ≤ x < 0,5	Acute Tox. 2 H300, Eye Irrit. 2 H319, Aquatic Chronic 3 H412
EC 254-075-1		LD50 Oral: 27,5 mg/kg
CAS 38668-48-3		
REACH Reg. 01-211998937-17-XXXX		
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate		
INDEX -	0,1 ≤ x < 0,5	Repr. 2 H361d, Aquatic Chronic 3 H412
EC 229-934-9		
CAS 6846-50-0		
REACH Reg. 01-2119451093-47-XXXX		
Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and Ethanol, 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-		
INDEX -	0,1 ≤ x < 0,5	Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 3 H412
EC 911-490-9		LD50 Oral: 619 mg/kg
CAS -		
REACH Reg. 01-2119979579-10-XXXX		
1,4-naphthoquinone		
INDEX -	0 < x < 0,05	Acute Tox. 2 H330, Acute Tox. 3 H301, Skin Corr. 1C H314, Eye Dam. 1 H318, STOT SE 3 H335, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=10, Aquatic Chronic 1 H410 M=1
EC 204-977-6		LD50 Oral: 124 mg/kg, ATE Inhalation mists/powders: 0,051 mg/l
CAS 130-15-4		
REACH Reg. 01-2120760462-57-XXXX		

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. Get medical advice/attention.

Rescuer 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

If there are no contraindications, spray powder with water to prevent the formation of dust.
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 and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.
Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. 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.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

hydroxypropyl

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,904	mg/l
Normal value in marine water	0,904	mg/l
Normal value for fresh water sediment	6,28	mg/kg
Normal value for marine water sediment	6,28	mg/kg
Normal value for water, intermittent release	0,972	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,727	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				2,5 mg/kg bw/d				
Inhalation				8,8 mg/m3				14,7 mg/m3
Skin				2,5 mg/kg bw/d				4,2 mg/kg bw/d

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

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,0017	mg/l
Normal value in marine water	0,00017	mg/l
Normal value for fresh water sediment	0,163	mg/kg
Normal value for marine water sediment	0,0163	mg/kg
Normal value of STP microorganisms	199,5	mg/l

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,25 mg/kg bw/d				
Inhalation								2,47 mg/m3
Skin								0,7 mg/kg bw/d

1-isopropyl-2,2-dimethyltrimethylene diisobutyrate

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,014	mg/l
Normal value in marine water	0,0014	mg/l
Normal value for fresh water sediment	5,29	mg/kg
Normal value for marine water sediment	0,529	mg/kg
Normal value of STP microorganisms	3	mg/l

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				5 mg/kg bw/d				
Inhalation				4,35 mg/m3				17,62 mg/m3
Skin				5 mg/kg bw/d				5 mg/kg bw/d

Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and Ethanol, 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,048	mg/l
Normal value in marine water	0,0048	mg/l
Normal value for fresh water sediment	1,2	mg/kg
Normal value for marine water sediment	0,12	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,21	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,83 mg/kg bw/d				
Inhalation				2,9 mg/m3				9,8 mg/m3
Skin				0,83 mg/kg bw/d				1,4 mg/kg bw/d

1,4-naphthoquinone		
Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,0000261	mg/l
Normal value in marine water	0,00000261	mg/l
Normal value for fresh water sediment	0,000321	mg/kg
Normal value for marine water sediment	0,0000321	mg/kg
Normal value of STP microorganisms	0,172	mg/l

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation								0,0392 mg/m3

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

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.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION
In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).
Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

Protect your hands with gloves of the following type:
Material: Nitrile rubber (NBR)
Thickness: 0,2 mm
Breakthrough time: 480 min

SKIN PROTECTION
Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION
Wear airtight protective goggles (see standard EN ISO 16321).

RESPIRATORY PROTECTION
None required, unless indicated otherwise in the chemical risk assessment.

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

Properties	Value	Information
Appearance	Pasty solid	
Colour	light grey	
Odour	characteristic	
Melting point / freezing point	-23 °C	Substance:Tetramethylene dimethacrylate
Initial boiling point	> 200 °C	Substance:Tetramethylene dimethacrylate
Flammability	not flammable	
Lower explosive limit	not applicable	Reason for missing data:not explosive
Upper explosive limit	not applicable	Reason for missing data:not explosive
Flash point	not applicable	Reason for missing data:The product is solid
Auto-ignition temperature	290 °C	Substance:Tetramethylene dimethacrylate
Decomposition temperature	not available	
pH	not available	Reason for missing data:substance/mixture is non-soluble (in water)
Kinematic viscosity	not applicable	Reason for missing data:The product is solid
Solubility	soluble in water	
Partition coefficient: n-octanol/water	not applicable	Reason for missing data:The product is a blend
Vapour pressure	not available	
Density and/or relative density	1,72 g/cm3	
Relative vapour density	not available	
Particle characteristics	not available	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Information not available

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

The vapours may also form explosive mixtures with the air.

10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

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

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

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

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	>2000 mg/kg
ATE (Dermal) of the mixture:	Not classified (no significant component)

hydroxypropyl

LD50 (Dermal):	> 5000 mg/kg
LD50 (Oral):	> 2000 mg/kg
LC50 (Inhalation vapours):	20 mg/l/4h

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

LD50 (Dermal):	2000 mg/kg
LD50 (Oral):	27,5 mg/kg

Vinyltoluene

LC50 (Inhalation vapours):	16,891 mg/l/4h

1-isopropyl-2,2-dimethyltrimethylene diisobutyrate
LD50 (Oral): 2000 mg/kg

Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and Ethanol, 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-
LD50 (Dermal): 2000 mg/kg
LD50 (Oral): 619 mg/kg rat

1,4-naphthoquinone
LD50 (Oral): 124 mg/kg

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

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

This product is dangerous for the environment and the aquatic organisms. In the long term, it has negative effects on the aquatic environment.
12.1. Toxicity

hydroxypropyl	
EC50 - for Crustacea	> 143 mg/l/48h
EC50 - for Algae / Aquatic Plants	> 97,2 mg/l/72h
1,1 '- (p-tolylimino) dipropan-2-ol	
EC50 - for Crustacea	28,8 mg/l/48h
EC50 - for Algae / Aquatic Plants	245 mg/l/72h
Vinyltoluene	
LC50 - for Fish	5,2 mg/l/96h
EC50 - for Crustacea	1,3 mg/l/48h
Chronic NOEC for Fish	0,398 mg/l
Chronic NOEC for Algae / Aquatic Plants	0,25 mg/l
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate	
EC50 - for Crustacea	1,46 mg/l/48h
EC50 - for Algae / Aquatic Plants	7,49 mg/l/72h
Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and Ethanol, 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-	
LC50 - for Fish	100 mg/l/96h
EC50 - for Crustacea	48 mg/l/48h
EC50 - for Algae / Aquatic Plants	100 mg/l/72h
1,4-naphthoquinone	
LC50 - for Fish	0,0448 mg/l/96h
EC50 - for Crustacea	0,0261 mg/l/48h
EC50 - for Algae / Aquatic Plants	0,42 mg/l/72h

12.2. Persistence and degradability

1,4-naphthoquinone

NOT rapidly degradable

12.3. Bioaccumulative potential

Information not available

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

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

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

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

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

Product
Point 40

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 ≥ than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

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

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)

WGK 3: Severe 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:

Flam. Liq. 3	Flammable liquid, category 3
Repr. 2	Reproductive toxicity, category 2
Acute Tox. 2	Acute toxicity, category 2
Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
Skin Corr. 1C	Skin corrosion, category 1C
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Skin Sens. 1	Skin sensitization, category 1
Skin Sens. 1B	Skin sensitization, category 1B
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H226	Flammable liquid and vapour.
H361d	Suspected of damaging the unborn child.
H300	Fatal if swallowed.
H330	Fatal if inhaled.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.

H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
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
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- 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)
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 (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)

22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
23. Delegated Regulation (UE) 2023/707
24. Delegated Regulation (UE) 2023/1434 (XIX Atp. CLP)
24. Delegated Regulation (UE) 2023/1435 (XX 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.