Safety Data Sheet

Complies with Annex II of REACH - Regulation (EU) 2020/878

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

1.1. Product identifier

Code:	**YCH0002**
Name	**SPEED 90**
Chemical name and synonyms	**SPEED 90**

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

Description/Use	**Acid cleaner, descaler, rust remover.**
Sector of use	**SU22 – Professional uses**

Uses not recommended. Avoid use:

- which results in the formation of aerosols where workers are exposed without respiratory protection.
- which poses a risk of splashes in the eyes/face where workers do not have eye/face protection.

1.3. Details of the supplier of the safety data sheet

Company Name	**MARBEC SRL**
Address	**VIA CROCESE ROSSA 5/i**
Location and State	**51037 MONTALE (PISTOIA)** **ITALY**
	Tel. +039 0573/959848
	fax
email of the competent person, responsible for the safety data sheet	**becarelli@marbec.it**

1.4. Emergency telephone number

For urgent information, please contact
MARBEC srl
0573959848 8.30am-1pm 2pm-6pm or 3357267921
Telephone number of Poison Control Centers active 24/7
National Poisons Information Service (Birmingham Unit) +44 844 892 0111

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions of Regulation (EC) 1272/2008 (CLP) (and subsequent amendments and additions). The product therefore requires a safety data sheet compliant with the provisions of Regulation (EU) 2020/878.
Any additional information regarding health and/or environmental risks is given in sections 11 and 12 of this sheet.

Classification and hazard statements:

Acute toxicity, category 4	H302	Harmful if swallowed.
Skin corrosion, category 1B	H314	Causes severe skin burns and serious eye damage.

Serious eye damage, category 1	H318	Causes serious eye damage.

2.2. Label elements

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

Hazard pictograms:

Warnings: Danger

Hazard statements:

H302	Harmful if swallowed.
H314	Causes severe skin burns and serious eye damage.

Precautionary advice:

P260	Do not breathe dust / fume / gas / mist / vapors / spray.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water [or shower].
P280	Wear protective gloves/clothing and eye/face protection.
P264	Wash hands thoroughly after use.
P301+P330+P331	IF SWALLOWED: Rinse mouth. DO NOT induce vomiting.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Contains:	AMMONIUM BIFLUORIDE Phosphoric Acid 75%

2.3. Other dangers

Based on available data, the product does not contain PBT or vPvB substances in percentages ≥ 0.1%.

The product does not contain substances with endocrine-disrupting properties in concentrations ≥ 0.1%.

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	**x = Conc. %**	**Classification 1272/2008 (CLP)**
Phosphoric Acid 75% CAS 7664-38-2	9 ≤ x < 15	Met. Corr. 1 H290, Acute Tox. 4 H302, Skin Corr. 1B H314, Eye Dam. 1 H318

EC 231-633-2		LD50 Oral: >300 mg/kg
INDEX 015-011-00-6		
REACH Reg. 01-2119485924-24-005		
AMMONIUM BIFLUORIDE		
CAS 1341-49-7	3 ≤ x < 5	Acute Tox. 3 H301, Skin Corr. 1B H314, Eye Dam. 1 H318
EC 215-676-4		Skin Corr. 1B H314: ≥ 1%, Skin Irrit. 2 H315: ≥ 0.1%, Eye Dam. 1 H318: ≥ 1%, Eye Irrit. 2 H319: ≥ 0.1%
INDEX 009-009-00-4		Oral LD50: 130
REACH Reg. 01-2119489180-38-xxxx		
2-PROPANOL		
CAS 67-63-0	1 ≤ x < 3	Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336
EC 200-661-7		
INDEX 603-117-00-0		
REACH Reg. 01-2119457558-25-xxxx		

The full text of the hazard statements (H) is given in section 16 of the sheet.

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove any contact lenses. Wash immediately with plenty of water for at least 30-60 minutes, holding the eyelids wide open. Consult a doctor immediately.

SKIN: Remove contaminated clothing. Shower immediately. Seek medical attention immediately.

INGESTION: Drink as much water as possible. Seek medical attention immediately. Do not induce vomiting unless directed by a doctor.

INHALATION: Call a doctor immediately. Move the victim to fresh air, away from the accident site. If breathing stops, administer artificial respiration. Take appropriate precautions for the rescuer.

4.2. Main symptoms and effects, both acute and delayed

There is no specific information available on symptoms and effects caused by the product.

4.3. Indication of any need to immediately consult a doctor and require special treatment

Information not available

SECTION 5. Fire-fighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING MEANS
Choose the most appropriate extinguishing media for the specific situation.
UNSUITABLE EXTINGUISHING MEANS
No one in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS DUE TO EXPOSURE IN CASE OF FIRE
The product is neither flammable nor combustible.

5.3. Recommendations for firefighters

EQUIPMENT
Normal firefighting clothing, such as open-circuit compressed air breathing apparatus (EN 137), flame-retardant overalls (EN469), flame-retardant gloves (EN 659) and firefighter's boots (HO A29 or A30).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep unauthorized persons away. Avoid breathing vapors/mists/gases. Wear appropriate protective equipment (including personal protective equipment as specified in Section 8 of the Safety Data Sheet) to prevent contamination of skin, eyes, and personal clothing. These instructions apply to both workers and emergency responders.

6.2. Environmental precautions

Prevent the product from entering sewers, surface water or groundwater.

6.3. Methods and materials for containment and remediation

Vacuum the spilled product into a suitable container. Assess the compatibility of the container to be used with the product, checking section 10. Absorb the remainder with inert absorbent material.
Ensure adequate ventilation of the spill area. Dispose of contaminated material in accordance with the provisions of section 13.

6.4. Reference to other sections

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

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Avoid aerosol formation. In the event of aerosol formation, special protective measures (exhaust, respiratory protection) are required. Ensure good ventilation of work areas. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Keep containers tightly closed in a well-ventilated area, away from direct sunlight. Store in a cool, well-ventilated place. Keep containers away from any incompatible materials, see section 10.

Storage class TRGS 510 (Germany):
8B

7.3. Specific end uses

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

DEU	Germany	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
ESP	Spain	Professional exposure limits for chemical agents in Spain 2021
BETWEEN	France	Value limits of professional exposure to chemical agents in France. ED 984 - INRS
ITA	Italy	Legislative Decree 9 April 2008, n.81
PRT	Portugal	Decree-Lei n.º 1/2021 of 6 January, indicative professional exposure limit values for chemical agents. Legislative Decree no. 35/2020 of 13 July, protection of workers against risks linked to exposure during work with cancerous or mutagenic agents
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	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.
	TLV-ACGIH	ACGIH 2021

Phosphoric Acid 75%

Threshold limit value

Type	State	TWA/8h		STEL/15min		Notes / Observations	
		mg/m3	ppm	mg/m3	ppm		
AGW	DEU	2		4			inhalable
MAK	DEU	2		4			inhalable
VLA	ESP	1		2			
VLEP	BETWEEN	1	0.2	2	0.5		
VLEP	ITA	1		2			
VLE	PRT	1		2			
WEL	GBR	1		2			
OEL	EU	1		2			

Health - Derived No-Effect Level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Exposure Route	Acute locals	Acute systemic	Chronic premises	Chronic systemic	Acute locals	Acute systemic	Chronic premises	Chronic systemic
Oral				0.1 mg/kg bw/d				
Inhalation			0.36 mg/m3	4.57 mg/m3	2 mg/m3		1 mg/m3	10.7 mg/m3
Dermal								VND

AMMONIUM BIFLUORIDE

Threshold limit value

Type	State	TWA/8h		STEL/15min		Notes / Observations	
		mg/m3	ppm	mg/m3	ppm		
MAK	DEU	1		4		INALAB	Als F
MAK	DEU	1		4		SKIN	Als F
VLA	ESP	2.5					Como F
VLEP	BETWEEN	2.5					
VLEP	ITA	2.5					like F
VLE	PRT	2.5					Como F

WEL	GBR	2.5					As F	
OEL	EU	2.5						
TLV-ACGIH		2.5						

Predicted no-effect concentration - PNEC		
Reference value in fresh water	1.3	mg/l
Reference value for STP microorganisms	76	mg/l
Reference value for the terrestrial compartment	22	mg/kg

Health - Derived No-Effect Level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Exposure Route	Acute locals	Acute systemic	Chronic premises	Chronic systemic	Acute locals	Acute systemic	Chronic premises	Chronic systemic
Oral		0.015 mg/kg bw/d		0.015 mg/kg bw/d				
Inhalation				0.045 mg/m3	3.8 mg/m3			2.3 mg/m3

2-PROPANOL

Threshold limit value

Type	State	TWA/8h		STEL/15min		Notes / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	500	200	1000	400	
MAK	DEU	500	200	1000	400	
VLA	ESP	500	200	1000	400	
VLEP	BETWEEN			980	400	
WEL	GBR	999	400	1250	500	
TLV-ACGIH		492	200	983	400	

Predicted no-effect concentration - PNEC		
Reference value in fresh water	140.9	mg/l
Reference value in seawater	140.9	mg/l
Reference value for sediments in freshwater	552	mg/kg
Reference value for sediments in seawater	552	mg/kg
Reference value for the terrestrial compartment	28	mg/kg

Health - Derived No-Effect Level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Exposure Route	Acute locals	Acute systemic	Chronic premises	Chronic systemic	Acute locals	Acute systemic	Chronic premises	Chronic systemic
Oral				26 mg/kg/d				
Inhalation				89 mg/kg				500 mg/m3
Dermal				319 mg/kg/d				888 mg/kg/d

Legend:

(C) = CEILING ; INALAB = Inhalable Fraction ; RESPIR = Respirable Fraction ; TORAC = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available; NEA = no exposure expected; NPI = no hazard identified.

8.2. Exposure controls

Considering that the use of appropriate technical measures should always take priority over personal protective equipment, ensure good ventilation in the workplace through effective local exhaust ventilation.
When choosing personal protective equipment, ask your chemical suppliers for advice.
Personal protective equipment must bear the CE marking, which certifies its compliance with current regulations.

Provide emergency shower with eye basin.

HAND PROTECTION
Protect your hands with category III work gloves (ref. standard EN 374).
When making the final choice of work glove material, the following factors must be considered: compatibility, degradation, break-through time and permeation.
When handling preparations, the resistance of work gloves to chemicals must be checked before use, as it is unpredictable. Gloves have a wear life that depends on the duration and manner of use.

SKIN PROTECTION
Wear long-sleeved work clothes and Category II professional safety footwear (ref. Regulation 2016/425 and standard EN ISO 20344). Wash with soap and water after removing protective clothing.

EYE PROTECTION
It is recommended to wear airtight protective glasses (ref. standard EN 166).

If there is a risk of being exposed to splashes or sprays in relation to the work carried out, adequate protection of the mucous membranes (mouth, nose, eyes) must be provided in order to avoid accidental absorption.

RESPIRATORY PROTECTION
If the threshold value (e.g., TLV-TWA) of the substance or one or more of the substances present in the product is exceeded, it is recommended to wear a mask with a type A filter, the class of which (1, 2, or 3) must be chosen in relation to the limit concentration of use. (Ref. standard EN 14387). If gases or vapors of a different nature and/or gases or vapors with particles (aerosols, fumes, mists, etc.) are present, combined type filters must be used.
The use of respiratory protection is necessary if the technical measures adopted are not sufficient to limit worker exposure to the threshold values considered. The protection offered by masks is, however, limited.
If the substance in question is odorless or its olfactory threshold is higher than the relevant TLV-TWA, and in an emergency, wear an open-circuit compressed air breathing apparatus (ref. standard EN 137) or a fresh air-supplied respirator (ref. standard EN 138). For the correct choice of respiratory protective device, refer to standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS
Emissions from manufacturing processes, including those from ventilation equipment, should be monitored to comply with environmental protection legislation.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Property	Value	Information
Physical State	liquid	
Color	colorless to slightly amber	
Odor	characteristic	
Melting or freezing point	Not available	
Initial boiling point	Not available	
Flammability	incombustible	
Lower explosive limit	Not applicable	
Upper explosive limit	Not applicable	
Flash point	>90°C	
Autoignition temperature	Not applicable	
Decomposition temperature	>200 °C	

pH	3
Kinematic viscosity	Not available
Solubility	soluble in water
Partition coefficient: n-octanol/water	Not available
Vapor pressure	Not available
Density and/or Relative Density	1.155 kg/l
Relative vapor density	Not available
Particle characteristics	Not applicable

9.2. Other information

9.2.1. Information relating to physical hazard classes

Flammable liquids

Maintaining combustion	does not maintain combustion

9.2.2. Other security features

VOC (Directive 2010/75/EU)	3.31% - 34.60 g/liter
Explosive properties	non-explosive
Oxidizing properties	non-oxidizing

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular dangers of reaction with other substances under normal conditions of use.

AMMONIUM BIFLUORIDE

It decomposes at temperatures above 230°C/446°F.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Vapors may form explosive mixtures with air.

AMMONIUM BIFLUORIDE

Risk of explosion on contact with: chlorine trifluoride, bromine trifluoride. May react dangerously with: acids.

10.4. Conditions to avoid

Avoid overheating.

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products

Thermal decomposition or fire may release gases and vapours that are potentially harmful to health.

AMMONIUM BIFLUORIDE

May produce: fluorine, hydrogen fluoride, ammonia, nitrogen gas.

SECTION 11. Toxicological information

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

Metabolism, kinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Immediate, delayed and chronic effects resulting from short and long-term exposures

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	Not classified (no relevant components)
ATE (Oral) of the mixture:	1000.00 mg/kg
ATE (Cutaneous) of the mixture:	Not classified (no relevant components)

Phosphoric Acid 75%

LD50 (Oral):	> 300 mg/kg rat

AMMONIUM BIFLUORIDE

LD50 (Oral):	130 mg/kg Rat

2-PROPANOL

LD50 (Dermal):	12800 mg/kg Rat
LD50 (Oral):	4710 mg/kg Rat
LC50 (Inhalation of vapours):	72.6 mg/l/4h Rat

SKIN CORROSION / SKIN IRRITATION

Corrosive to the skin

SERIOUS EYE DAMAGE / EYE IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITIZATION

Does not meet the classification criteria for this hazard class

Respiratory sensitization

Information not available

Skin sensitization

Information not available

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

Adverse effects on sexual function and fertility

Information not available

Adverse effects on the development of offspring

Information not available

Effects on or through breastfeeding

Information not available

SPECIFIC TARGET ORGAN TOXICITY (STOT) - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

Information not available

Exposure route

Information not available

SPECIFIC TARGET ORGAN TOXICITY (STOT) - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

Information not available

Exposure route

Information not available

DANGER IN CASE OF ASPIRATION

Does not meet the classification criteria for this hazard class

11.2. Information on other hazards

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

SECTION 12. Ecological information

12.1. Toxicity

2-PROPANOL

LC50 - Fish	> 100 mg/l/96h leuciscus idus melanotus, static
EC50 - Crustaceans	> 100 mg/l/48h Daphnia magna Static test
EC50 - Algae / Aquatic Plants	> 100 mg/l/72h scenedesmus subspicatus. Static test

Phosphoric Acid 75%

LC50 - Fish	> 1.3 mg/l/96h Lepomis macrochirus
EC50 - Crustaceans	> 100 mg/l/48h Daphnia magna
EC50 - Algae / Aquatic Plants	> 100 mg/l/72h alga

12.2. Persistence and degradability

AMMONIUM BIFLUORIDE

Solubility in water	> 10000 mg/l

Degradability: data not available

2-PROPANOL

Rapidly degradable

Phosphoric Acid 75%

Degradability: data not available

12.3. Bioaccumulative potential

AMMONIUM BIFLUORIDE

BCF	0.5

2-PROPANOL

Partition coefficient: n-octanol/water 0.05

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

Based on available data, the product does not contain PBT or vPvB substances in percentages ≥ 0.1%.

12.6. Endocrine-disrupting properties

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

12.7. Other adverse effects

Information not available

SECTION 13. Disposal Considerations

13.1. Waste treatment methods

Reuse if possible. Product residues are considered hazardous waste. The hazardous nature of waste containing part of this product must be assessed in accordance with current legislation.
Disposal must be entrusted to an authorized waste management company, in compliance with national and, where applicable, local legislation.
The transport of waste may be subject to ADR.

CONTAMINATED PACKAGING
Contaminated packaging must be sent for recovery or disposal in compliance with national waste management regulations.

SECTION 14. Transport Information

14.1. UN number or ID number

ADR / RID, IMDG, IATA: 3264

14.2. UN official shipping name

ADR / RID:	CORROSIVE INORGANIC LIQUID, ACIDIC, NOS (PHOSPHORIC ACID; AMMONIUM BIFLUORIDE)
IMDG:	CORROSIVE LIQUID, ACIDIC, INORGANIC, NOS (PHOSPHORIC ACID; AMMONIUM BIFLUORIDE)
IATA:	CORROSIVE LIQUID, ACIDIC, INORGANIC, NOS (PHOSPHORIC ACID; AMMONIUM BIFLUORIDE)

14.3. Transport hazard classes

ADR / RID: Class: 8 Label: 8

IMDG:	Class: 8	Label: 8
IATA:	Class: 8	Label: 8

14.4. Packing group

ADR / RID, IMDG, IATA:	III

14.5. Environmental hazards

ADR / RID:	NO
IMDG:	NO
IATA:	NO

14.6. Special precautions for users

ADR / RID:	HIN - Kemler: 80	Limited Quantities: 5 L	Tunnel restriction code: (E)
	Special provision: -		
IMDG:	EMS: FA, SB	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 60 L	Packaging Instructions: 856
	Pass.:	Maximum quantity: 5 L	Packaging Instructions: 852
	Special provision:	A3, A803	

14.7. Bulk maritime transport in accordance with IMO provisions

Irrelevant information

SECTION 15. Regulatory Information

15.1. Legislative and regulatory provisions on health, safety and environment specific for the substance or mixture

Seveso Category - Directive 2012/18/EU: None

Restrictions relating to the product or the substances contained in it according to Annex XVII of Regulation (EC) 1907/2006

Product

Point	3 - 40

Substances contained

Point	75

Point	65	AMMONIUM BIFLUORIDE REACH Reg.: 01-2119489180-38-xxxx

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

Not applicable

Substances in Candidate List (Art. 59 REACH)

Based on available data, the product does not contain SVHC substances in a percentage ≥ 0.1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to export notification requirements Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Health Checks

Workers exposed to this hazardous chemical agent must undergo health surveillance in accordance with the provisions of Article 41 of Legislative Decree 81 of 9 April 2008, unless the risk to the worker's health and safety has been deemed insignificant, as provided for in Article 224, paragraph 2.

15.2. Chemical safety assessment

A chemical safety assessment has been carried out for the following substances contained in the mixture.
Phosphoric Acid, 2-Propanol, Ammonium Bifluoride.

SECTION 16. Other information

Text of the hazard statements (H) cited in sections 2-3 of the sheet:

Flam. Liq. 2	Flammable liquid, category 2
Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
Skin Corr. 1B	Skin corrosion, category 1B
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2

STOT SE 3	Specific target organ toxicity - single exposure, category 3
H225	Highly flammable liquid and vapor.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and serious eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

LEGEND:
- ADR: European Agreement concerning the Carriage of Dangerous Goods by Road
- CAS: Chemical Abstract Service Number
- CE: Identification number in ESIS (European Archive of Existing Substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EC50: Concentration that produces an effect in 50% of the test population
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of Classification and Labeling of Chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulations
- IC50: Immobilization concentration of 50% of the test population
- IMDG: International Maritime Dangerous Goods Code
- IMO: International Maritime Organization
- INDEX: Identification number in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic according to REACH
- PEC: Predicted Environmental Concentration
- PEL: Predicted Exposure Level
- PNEC: Predicted No Effect Concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulations for the International Carriage of Dangerous Goods by Rail
- STA: Acute Toxicity Estimation
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that must not be exceeded during any time of occupational exposure.
- TWA: Time Weighted Average Exposure Limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic compound
- vPvB: Very Persistent and Very Bioaccumulative according to REACH
- WGK: Water hazard class (Germany).

GENERAL BIBLIOGRAPHY:
1. Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH)
2. Regulation (EC) 1272/2008 of the European Parliament and of the Council (CLP)
3. Regulation (EU) 2020/878 (Annex II of the REACH Regulation)
4. Regulation (EC) 790/2009 of the European Parliament and of the Council (I Atp. CLP)
5. Regulation (EU) 286/2011 of the European Parliament and of the Council (II Atp. CLP)
6. Regulation (EU) 618/2012 of the European Parliament and of the Council (III Atp. CLP)
7. Regulation (EU) 487/2013 of the European Parliament and of the Council (IV Atp. CLP)
8. Regulation (EU) 944/2013 of the European Parliament and of the Council (V Atp. CLP)
9. Regulation (EU) 605/2014 of the European Parliament and of the Council (VI Atp. CLP)
10. Regulation (EU) 2015/1221 of the European Parliament and of the Council (VII Atp. CLP)
11. Regulation (EU) 2016/918 of the European Parliament and of the Council (VIII Atp. CLP)
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 (EU) 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)
- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- NI Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS Website
- ECHA Agency Website
- Database of SDS templates for chemical substances - Ministry of Health and Istituto Superiore di Sanità

Note to user:
The information contained in this sheet is based on our current knowledge as of the date of the latest version. The user must ensure the suitability and completeness of the information for the specific use of the product.
This document should not be construed as a guarantee of any specific property of the product.
Since the use of the product is not under our direct control, it is the user's responsibility to comply with all applicable health and safety laws and regulations.
We assume no liability for improper use.
Provide adequate training to personnel involved in the use of chemicals.
CLASSIFICATION CALCULATION METHODS
Chemical-physical hazards: The classification of the product was derived from the criteria established by the CLP Regulation Annex I Part 2. The methods for evaluating the chemical-physical properties are reported in section 9.
Health hazards: The classification of the product is based on the calculation methods in Annex I of CLP Part 3, unless otherwise indicated in section 11.
Environmental hazards: The classification of the product is based on the calculation methods in Annex I of CLP Part 4, unless otherwise indicated in section 12.

Changes from the previous revision
Changes have been made to the following sections:
01 / 02 / 03 / 09 / 11 / 12 / 15 / 16.