

## 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

Code: 959  
Product name: Pineline Hull Cleaner

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

Intended use: Boat cleaner

## 1.3. Details of the supplier of the safety data sheet

Name: TEKNO-FOREST OY  
Full address: Kynttilätie 3  
District and Country: 11710 Riihimäki Finland  
Tel.: (+358)-19-774860  
Fax: -  
e-mail address of the competent person responsible for the Safety Data Sheet: info@pineline.com

Supplier: -

## 1.4. Emergency telephone number

For urgent inquiries refer to: -

Emergency number in Finland: 112.  
Poison information centre, PL 790, 00029 HUS: tel. 09-471977 or 09-4711.

## 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:  
Serious eye damage, category 1 H318 Causes serious eye damage.  
Skin irritation, category 2 H315 Causes skin irritation.

## 2.2. Label elements

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

Hazard pictograms:



Signal words: Danger

Hazard statements:  
H318 Causes serious eye damage.  
H315 Causes skin irritation.

Precautionary statements:  
P102 Keep out of reach of children.

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

## SECTION 2. Hazards identification ... / &gt;&gt;

<b>P261</b>	Avoid breathing [dust / fume / gas / mist / vapours / spray].
<b>P280</b>	Wear protective gloves / eye protection / face protection.
<b>P302+P352</b>	IF ON SKIN: wash with plenty of water / . . .
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P310</b>	Immediately call a POISON CENTER / doctor / . . .

**Contains:** ALKYLGLUCOSIDE  
ALCOHOL ETHOXYLATE  
PHOSPHORIC ACID

## 2.3. Other hazards

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

The product does not contain substances with endocrine disrupting properties in concentration  $\geq$  0.1%.

## SECTION 3. Composition/information on ingredients

## 3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
<b>OXALIC ACID</b>		
INDEX 607-006-00-8	$5 \leq x < 10$	<b>Acute Tox. 4 H302, Acute Tox. 4 H312</b> <b>LD50 Oral: 375 mg/kg, STA Dermal: 1100 mg/kg</b>
EC 205-634-3		
CAS 144-62-7		
<b>ALCOHOL ETHOXYLATE</b>		
INDEX	$5 \leq x < 10$	<b>Acute Tox. 4 H302, Eye Dam. 1 H318</b> <b>LD50 Oral: &gt;300 mg/kg</b>
EC		
CAS 69011-36-5		
<b>ALKYLGLUCOSIDE</b>		
INDEX	$3 \leq x < 5$	<b>Eye Dam. 1 H318</b>
EC		
CAS 125590-73-0		
<b>2-(2-BUTOXYETHOXY)ETHANOL</b>		
INDEX 603-096-00-8	$1 \leq x < 3$	<b>Eye Irrit. 2 H319</b>
EC 203-961-6		
CAS 112-34-5		
<b>PHOSPHORIC ACID</b>		
INDEX 015-011-00-6	$1 \leq x < 2$	<b>Skin Corr. 1B H314, Eye Dam. 1 H318, Classification note according to Annex VI to the CLP Regulation: B</b> <b>Skin Corr. 1B H314: <math>\geq</math> 25%, Skin Irrit. 2 H315: <math>\geq</math> 10%, Eye Dam. 1 H318: <math>\geq</math> 25%, Eye Irrit. 2 H319: <math>\geq</math> 10%</b>
EC 231-633-2		
CAS 7664-38-2		

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

**EYES:** Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

**SKIN:** Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

**INGESTION:** Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

**INHALATION:** Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

## 4.2. Most important symptoms and effects, both acute and delayed

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

**SAFETY DATA SHEET** According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH**SECTION 4. First aid measures** ... / >>**4.3. Indication of any immediate medical attention and special treatment needed**

Information not available

**SECTION 5. Firefighting measures****5.1. Extinguishing media**

## SUITABLE EXTINGUISHING EQUIPMENT

Choose the most appropriate extinguishing equipment for the specific case.

## 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

The product is neither flammable nor combustible.

**5.3. Advice for firefighters**

## 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**

Spills of 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 temperature: +5...+30 °C. Self life: 12 months from date of production if stored properly in original sealed containers.

**7.3. Specific end use(s)**

Information not available

**SAFETY DATA SHEET** According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

### SECTION 8. Exposure controls/personal protection

#### 8.1. Control parameters

Regulatory References:

EST	Eesti	Ohtlike kemikaalide ja neid sisaldavate materjalide kasutamise töötervishoiu ja tööohutuse nõuded ning töökeskkonna keemiliste ohutegurite piirnormid [RT I, 17.10.2019, 1 - jõust. 17.01.2020]
FIN	Suomi	HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSOVÅRDSDMINISTERIETS PUBLIKATIONER 2020:25
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
NOR	Norge	Forskrift om endring i forskrift om tiltaksverdier og grenseverdier for fysiske og kjemiske faktorer i arbeidsmiljøet samt smitterisikogrupper for biologiske faktorer (forskrift om tiltaks- og grenseverdier), 21. august 2018 nr. 1255
SWE	Sverige	Hygieniska gränsvärden, Arbetsmiljöverkets föreskrifter och allmänna råd om hygieniska gränsvärden (AFS 2018:1)
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	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.
	TLV-ACGIH	ACGIH 2021

#### OXALIC ACID

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	EST	1		2		
HTP	FIN	1		3		SKIN
VLEP	ITA	1				
TLV	NOR	1				
NGV/KGV	SWE	1		2 (C)		
WEL	GBR	1		2		
OEL	EU	1				
TLV-ACGIH		1		2		

#### 2-(2-BUTOXYETHOXY)ETHANOL

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
HTP	FIN	68	10			
VLEP	ITA	67,5	10	101,2	15	
TLV	NOR	68	10			
NGV/KGV	SWE	68	10	101	15	
WEL	GBR	67,5	10	101,2	15	
OEL	EU	67,5	10	101,2	15	
TLV-ACGIH		66	10			INHAL

#### PHOSPHORIC ACID

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	EST	1		2		
HTP	FIN	1		2		
VLEP	ITA	1		2		
TLV	NOR	1				
NGV/KGV	SWE	1		2		
WEL	GBR	1		2		
OEL	EU	1		2		
TLV-ACGIH		1		3		

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

#### 8.2. Exposure controls

**SAFETY DATA SHEET** According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

**SECTION 8. Exposure controls/personal protection ... / >>**

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.

**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 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, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (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**

Properties	Value	Information
Appearance	liquid	
Colour	colourless	
Odour	pungent	
Melting point / freezing point	not available	
Initial boiling point	> 100 °C	
Flammability	incombustible	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	> 100 °C	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	1	
Kinematic viscosity	not available	
Solubility	soluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1,03	
Relative vapour density	not available	
Particle characteristics	not applicable	

**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

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

**SECTION 10. Stability and reactivity****10.1. Reactivity**

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

**OXALIC ACID**

Decomposes at temperatures above 157°C/315°F.  
Saturated aqueous solutions (15%) behave like medium-strong acids.

**PHOSPHORIC ACID**

Decomposes at temperatures above 200°C/392°F.

**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.

**OXALIC ACID**

May form explosive mixtures with: oxidising substances. Reacts violently developing heat on contact with: alkaline metals, ammonia, mercury, furfuryl alcohol, chlorates, hypochlorites. Risk of explosion on contact with: sodium chlorite, silver.

**2-(2-BUTOXYETHOXY)ETHANOL**

May react with: oxidising substances. May form peroxides with: oxygen. Develops hydrogen on contact with: aluminium. May form explosive mixtures with: air.

**PHOSPHORIC ACID**

Risk of explosion on contact with: nitromethane. May react dangerously with: alkalis, sodium borohydride.

**10.4. Conditions to avoid**

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

**2-(2-BUTOXYETHOXY)ETHANOL**

Avoid exposure to: air.

**10.5. Incompatible materials****OXALIC ACID**

Incompatible with: strong oxidants, metals, alkaline metals, furfurylic acid, chlorine compounds.

**2-(2-BUTOXYETHOXY)ETHANOL**

Incompatible with: oxidising substances, strong acids, alkaline metals.

**PHOSPHORIC ACID**

Incompatible with: metals, strong alkalis, aldehydes, organic sulphides, peroxides.

**10.6. Hazardous decomposition products****OXALIC ACID**

May develop: carbon oxides.

**2-(2-BUTOXYETHOXY)ETHANOL**

May develop: hydrogen.

**PHOSPHORIC ACID**

May develop: phosphoryl oxides.

**SECTION 11. Toxicological information****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**2-(2-BUTOXYETHOXY)ETHANOL**

WORKERS: inhalation; contact with the skin.

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

**SAFETY DATA SHEET** According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

**SECTION 11. Toxicological information ... / >>**
**2-(2-BUTOXYETHOXY)ETHANOL**

May be absorbed by inhalation, ingestion and skin contact; is irritating for the skin and especially for the eyes. May cause damage to the spleen. At room temperature the danger of inhalation is unlikely, due to the low vapour pressure of the substance.

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:	>2000 mg/kg

**OXALIC ACID**

STA (Dermal):	1100 mg/kg estimate from table 3.1.2 of Annex I of the CLP (figure used for calculation of the acute toxicity estimate of the mixture)
LD50 (Oral):	375 mg/kg Rat

**ALCOHOL ETHOXYLATE**

LD50 (Oral):	> 300 mg/kg
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**ALKYLGLUCOSIDE**

LD50 (Oral):	> 2000 mg/kg
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**2-(2-BUTOXYETHOXY)ETHANOL**

LD50 (Dermal):	2700 mg/kg Rabbit
LD50 (Oral):	3384 mg/kg Rat

**PHOSPHORIC ACID**

LD50 (Dermal):	2740 mg/kg Rabbit
LD50 (Oral):	1530 mg/kg Rat
LC50 (Inhalation mists/powders):	> 0,85 mg/l/1h Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

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

**SAFETY DATA SHEET** According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

**SECTION 11. Toxicological information ... / >>**
**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**

ALKYLGLUCOSIDE  
LC50 - for Fish > 310 mg/l/96h

ALCOHOL ETHOXYLATE  
LC10 for Fish > 1 mg/l/96h

**12.2. Persistence and degradability**

ALKYLGLUCOSIDE  
Rapidly degradable

ALCOHOL ETHOXYLATE  
Rapidly degradable

PHOSPHORIC ACID  
Solubility in water > 850000 mg/l  
Degradability: information not available

OXALIC ACID  
Solubility in water > 10000 mg/l  
Rapidly degradable

2-(2-BUTOXYETHOXY)ETHANOL  
Solubility in water 1000 - 10000 mg/l  
Rapidly degradable

**12.3. Bioaccumulative potential**

OXALIC ACID  
Partition coefficient: n-octanol/water -1,7

2-(2-BUTOXYETHOXY)ETHANOL  
Partition coefficient: n-octanol/water 1

**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



**SAFETY DATA SHEET** According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

## 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 3

Contained substance

Point 75

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)

None

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

None

**SAFETY DATA SHEET** According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

### SECTION 15. Regulatory information ... / >>

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.

#### 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:

<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>Skin Corr. 1B</b>	Skin corrosion, category 1B
<b>Eye Dam. 1</b>	Serious eye damage, category 1
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Skin Irrit. 2</b>	Skin irritation, category 2
<b>H302</b>	Harmful if swallowed.
<b>H312</b>	Harmful in contact with skin.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H318</b>	Causes serious eye damage.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.

**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 as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- 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 as for REACH Regulation
- 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

**SAFETY DATA SHEET** According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH**SECTION 16. Other information** ... / >>

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)

- 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 to previous review:

The following sections were modified:

02 / 03 / 08 / 09 / 11 / 12 / 15 / 16.