

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: **132**
 Product name: **BRILLER LP**

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

Intended use: **Liquid rinse aid for dishwashing machine.**

Identified Uses	Industrial	Professional	Consumer
Products for washing and cleaning	-	PROC: 10, 11, 8b. PC: 35.	-
Products for washing and cleaning	PROC: 10, 13, 7, 8a, 8b. PC: 35.	-	-

Uses Advised Against

None known

1.3. Details of the supplier of the safety data sheet

Name: **FIRMA SRL**
 Full address: **VIA PER MODENA, 28**
 District and Country: **42015 CORREGGIO (RE) IT**
 Tel.: **0522 691880**
 Fax: **0522 631277**

e-mail address of the competent person responsible for the Safety Data Sheet: **SDS@FIRMACHIMICA.IT**

Supplier: **FIRMA SRL**

1.4. Emergency telephone number

For urgent inquiries refer to: **Tel. 0039 0522 691880 Office hours: 08.30 - 12.30, 14.00 - 18.00**
Tel. 0039 0522 036527 other times – laboratorio@firmachimica.it

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:
 Eye irritation, category 2 H319 Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms:



SECTION 2. Hazards identification ... / >>

Signal words: Warning

Hazard statements:
H319 Causes serious eye irritation.

Precautionary statements:
P280 Wear protective gloves/ protective clothing / eye protection / face protection.
P302+P352 IN CASE OF CONTACT WITH SKIN: wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice / attention if you feel unwell.

Ingredients according to Regulation (EC) No. 648/2004

Less than 5%	anionic surfactants, EDTA (ethylenediaminetetraacetic acid) sodium salt
5% or over but less than 15%	non-ionic surfactants
dye	

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)
alcol grasso etopropossilato		
CAS	166736-08-9	$10 \leq x < 20$ Eye Irrit. 2 H319
EC	944-523-0	
INDEX		
REACH Reg.	polimero	
PROPAN-2-OL		
CAS	67-63-0	$1 \leq x < 3$ 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	
Sodio xilenesolfonato polvere		
CAS	1300-72-7	$1 \leq x < 3$ Eye Irrit. 2 H319
EC	701-037-1	
INDEX		
REACH Reg.	01-2119513350-56	
EDTA tetrasodico		
CAS	64-02-8	$0 \leq x < 1$ Acute Tox. 4 H302, Eye Dam. 1 H318
EC	200-573-9	LD50 Oral: >1780 mg/kg
INDEX		
REACH Reg.	01-2119486762-27	

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: eliminate any contact lenses. Wash immediately and abundantly with water for at least 30/60 minutes, opening the eyelids well. See a doctor immediately.

SKIN: wash immediately with water and rinse. Change clothes if necessary. If irritation persists or tissue damage occurs, seek medical advice. In case of skin irritation consult a doctor.

INGESTION: DO NOT induce vomiting. Seek medical advice immediately. Never give anything by mouth to an unconscious or cramped person.

SECTION 4. First aid measures ... / >>

INHALATION: Call a doctor immediately. Take the person outdoors, away from the accident site. If breathing stops, give artificial respiration. Take adequate precautions for the rescuer.

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

Causes serious eye irritation. Causes skin irritation.

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 MEDIA: The extinguishing media are the traditional ones: carbon dioxide, foam and chemical powder. For leaks and spills of the product that have not ignited, the nebulized water can be used to disperse the flammable vapors and to protect the people involved in stopping the loss. **NON-SUITABLE EXTINGUISHING MEDIA:** Do not use water jets. Water is not effective for extinguishing the fire but it can be used to cool closed containers exposed to the flame, preventing bursts and explosions.

5.2. Special hazards arising from the substance or mixture

HAZARDS DUE TO EXPOSURE IN THE EVENT OF FIRE: Avoid breathing combustion products: carbon oxides.

5.3. Advice for firefighters

GENERAL INFORMATION: Cool the containers with water jets to avoid decomposition of the product and the development of substances potentially hazardous for health. Wear, if necessary, complete fire protection equipment. Collect extinguishing water that must not be discharged into drains. Dispose of the contaminated water used for the fire extinguisher and the residue according to the regulations in force. **EQUIPMENT:** Not necessary for small fires. If necessary, wear fire-fighting clothing such as a fireproof suit (EN469), fireproof gloves (EN659) and boots for firefighters (HO A29 or A30) depending on the amount of product and any other materials involved in the fire.

SECTION 6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Stop the leak if there is no danger. Wear appropriate protective equipment (including personal protective equipment referred to in section 8 of the safety data sheet) to prevent contamination of the skin, eyes and personal clothing. These indications are valid both for workers involved in the work and for emergency interventions.

6.2. Environmental precautions

Prevent the product from entering sewers, surface waters, water tables.

6.3. Methods and material for containment and cleaning up

Vacuum the leaked product into a suitable container. Evaluate 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 area affected by the loss. Disposal of the contaminated material must be carried out in accordance with the provisions of point 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**

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. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

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. Store in a cool and well

SECTION 7. Handling and storage ... / >>

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)

See the exposure scenarios attached to this safety datasheet.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

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.

PROPAN-2-OL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
OEL	EU	492	200	983	400	

Predicted no-effect concentration - PNEC

Normal value in fresh water	140,9	mg/l
Normal value in marine water	140,9	mg/l
Normal value for fresh water sediment	552	mg/kg
Normal value for marine water sediment	552	mg/kg
Normal value for water, intermittent release	140,9	mg/l
Normal value of STP microorganisms	2251	mg/l
Normal value for the food chain (secondary poisoning)	160	mg/kg
Normal value for the terrestrial compartment	28	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Chronic local	Chronic systemic	Effects on workers		
	Acute local	Acute systemic	Chronic local			Acute systemic	Chronic local	Chronic systemic
Oral			VND	26				
				mg/kg bw/d				
Inhalation			VND	89		VND		500
				mg/m ³				mg/m ³
Skin			VND	319		VND		888
				mg/kg bw/d				mg/kg bw/d

Sodio xilenesolfonato polvere

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,23	mg/l
Normal value in marine water	0,023	mg/l
Normal value for fresh water sediment	0,862	mg/kg
Normal value for marine water sediment	0,086	mg/kg
Normal value for water, intermittent release	2,3	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	0,037	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Chronic local	Chronic systemic	Effects on workers		
	Acute local	Acute systemic	Chronic local			Acute systemic	Chronic local	Chronic systemic
Oral				3,8				
				mg/kg bw/d				
Inhalation				6,6				26,9
				mg/m ³				mg/m ³
Skin			0,048	68,1		0,096		136,25
			mg/cm ²	mg/kg bw/d		mg/cm ²		mg/kg bw/d

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

EDTA tetrasodico

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
OEL	EU	10				INHAL	
OEL	EU	3				RESP	

Predicted no-effect concentration - PNEC

Normal value in fresh water	2,83	mg/l
Normal value in marine water	0,283	mg/l
Normal value for water, intermittent release	1,2	mg/l
Normal value of STP microorganisms	50	mg/l
Normal value for the terrestrial compartment	1,1	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Oral				25				
				mg/kg bw/d				
Inhalation	1,2		0,6		3	3	1,5	1,5
	mg/m3		mg/m3		mg/m3	mg/m3	mg/m3	mg/m3

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.
 VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

8.2. Exposure controls

Comply with the safety measures usually applied when handling chemical substances.

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.

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 III 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).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

Respiratory protection is not normally required. In any case, avoid inhalation of vapors, aerosols and gases. Use self-contained breathing apparatus or masks with filter type "A" during emergency operations. EN 141 gas / vapor filters. A respirator is not required under normal conditions of use and under the conditions for using the product. In case of insufficient ventilation and / or in the case of short or minimal exposure use the mask, wear an appropriate respirator (with filter type "A").

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

For information on controlling environmental exposure, see the exposure scenarios attached to this safety datasheet.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	blue	
Odour	solvent	
Melting point / freezing point	< 5 °C	Substance:alcol grasso etopropossilato
Initial boiling point	> 100 °C	
Flammability	not determined	
Lower explosive limit	Not applicable	
Upper explosive limit	Not applicable	

SECTION 9. Physical and chemical properties ... / >>

Flash point	> 61 °C	
Auto-ignition temperature	Not applicable	
Decomposition temperature	> 300 °C	Substance:alcol grasso etopropossilato
pH	10,5	
Kinematic viscosity	50-100 cst	Temperature: 20 °C
Dynamic viscosity	50-100 cps	Temperature: 20 °C
Solubility	completamente solubile in acqua	Temperature: < 40 °C
Partition coefficient: n-octanol/water	<0	Temperature: 20 °C
Vapour pressure	0,1 hPa	Substance:alcol grasso etopropossilato
		Temperature: 20 °C
Density and/or relative density	1,015 g/cm3	Temperature: 20 °C
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

Total solids (250°C / 482°F)	17,00 %	Temperature: 105 °C
Explosive properties	not explosive	
Oxidising properties	non ossidante	
Frost point	circa 5°C	

SECTION 10. Stability and reactivity

In the absence of data relating to the preparation, the following information refers to the substances that make up the mixture.

10.1. Reactivity

Depending on the nature of the components, it is not considered that the product can react violently with other substances miscible with water. In any case, keep away from strongly reducing or oxidising compounds.

PROPAN-2-OL

It can react violently with oxidizing agents and strong acids.

EDTA tetrasodico

Decomposes above 150 °C.

10.2. Chemical stability

The product is stable in storage conditions and recommended use (see paragraph 7).

10.3. Possibility of hazardous reactions

Under normal conditions of use and storage, no dangerous reactions are foreseeable.

10.4. Conditions to avoid

None in particular. Follow the usual precautions against chemicals.

10.5. Incompatible materials

Do not store in metal containers.

PROPAN-2-OL

Oxidizing agents, strong acids, chlorine-containing compounds, aldehydes, alkanolamines, alkaline and alkaline-earth metals (aluminum etc ...)

Sodio xilenesolfonato polvere

Incompatible with: oxidising agents. Incompatible with: acids, alkalis.

10.6. Hazardous decomposition products

In case of excessive heating the product may decompose liberating potentially toxic gases.

PROPAN-2-OL

Carbon oxides. Formaldehyde.

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 1272/2008Metabolism, 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:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

alcol grasso etopropossilato LD50 (Oral):	> 2000 mg/kg ratto
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PROPAN-2-OL LD50 (Oral):	5840 mg/kg ratto
LD50 (Dermal):	13900 mg/kg ratto
LC50 (Inhalation vapours):	25000 mg/m3 ratto

Sodio xilenesolfonato polvere LD50 (Oral):	7000 mg/kg ratto
LD50 (Dermal):	> 2000 mg/kg coniglio
LC50 (Inhalation mists/powders):	6410 mg/m3 ratto

EDTA tetrasodico LD50 (Oral):	> 1780 mg/kg ratto
LC50 (Inhalation vapours):	30 mg/m3/6h ratto

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

Respiratory sensitization

Information not available

Skin sensitization

Information not available

SECTION 11. Toxicological information ... / >>

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 development of the offspring

Information not available

Effects on or via lactation

Information not available

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

Information not available

Route of exposure

Information not available

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

EDTA tetrasodico
Tratto respiratorio.

Route of exposure

EDTA tetrasodico
inalazione.

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

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

SECTION 12. Ecological information ... / >>

alcol grasso etopropossilato	
LC50 - for Fish	> 10 mg/l/96h
EC50 - for Crustacea	> 10 mg/l/48h
EC50 - for Algae / Aquatic Plants	> 10 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	> 1 mg/l
PROPAN-2-OL	
LC50 - for Fish	9640 mg/l/96h Pimephales promelas
EC50 - for Crustacea	> 10000 mg/l 24h Daphnia Magna
EC10 for Algae / Aquatic Plants	1800 mg/l/7 giorni Scenedesmus quadricauda
Sodio xilenesolfonato polvere	
LC50 - for Fish	> 1000 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	> 1000 mg/l/48h
EC50 - for Algae / Aquatic Plants	> 230 mg/l/96h Pseudokirchnerella subcapitata
Chronic NOEC for Algae / Aquatic Plants	> 31 mg/l/96h Pseudokirchnerella subcapitata
EDTA tetrasodico	
LC50 - for Fish	> 100 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	> 100 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	> 100 mg/l/72h Pseudokirchneriella subcapitata
EC10 for Algae / Aquatic Plants	48,4 mg/l/72h Pseudokirchneriella subcapitata
Chronic NOEC for Fish	35,1 mg/l/21d Danio rerio
Chronic NOEC for Crustacea	25 mg/l/21d Daphnia magna

12.2. Persistence and degradability

alcol grasso etopropossilato	
Rapidly degradable	
PROPAN-2-OL	
Rapidly degradable	> 70% in 10 giorni
Sodio xilenesolfonato polvere	
Solubility in water	664 g/l 20°C
Rapidly degradable	OECD 301D
EDTA tetrasodico	
Solubility in water	500 g/l 20°C
NOT rapidly degradable	OECD 301D

12.3. Bioaccumulative potential

PROPAN-2-OL	
Partition coefficient: n-octanol/water	0,05 Log Kow
Sodio xilenesolfonato polvere	
Partition coefficient: n-octanol/water	-3,12 LogKow 20°C

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

Information not available

SECTION 15. Regulatory information ... / >>

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.

Regulation (EC) No. 648/2004

Ingredients according to Regulation (EC) No. 648/2004

The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances

PROPAN-2-OL

Sodio xilenesolfonato polvere

EDTA tetrasodico

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 2	Flammable liquid, category 2
Acute Tox. 4	Acute toxicity, category 4
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 vapour.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Use descriptor system:

PC 35	Washing and cleaning products
PROC 10	Roller application or brushing
PROC 11	Non industrial spraying
PROC 13	Treatment of articles by dipping and pouring
PROC 7	Industrial spraying
PROC 8a	Transfer of substance or mixture (charging and discharging) at non- dedicated facilities
PROC 8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities

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

SECTION 16. Other information ... / >>

- 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
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)

- 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:

01 / 02 / 03 / 08 / 09 / 10 / 11 / 12 / 15 / 16.