



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: YC---M382/-----
Product name: HARDENER FOR TWO-PACK WATER-BASED PRODUCTS
UFI: 0MG1-S0CU-P008-UEER

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

Intended use: HARDENER FOR WATERBORNE COATINGS

Identified Uses	Industrial	Professional	Consumer
Hardener for water-based system for industrial and professional uses	PROC: 10, 13, 7. PC: 9a.	PROC: 10, 11, 13. PC: 9a.	-

1.3. Details of the supplier of the safety data sheet

Name: RENNER ITALIA S.P.A.
Full address: Via Ronchi Inferiore, 34
District and Country: 40061 Minerbio (BO) Italia
Tel.: +39 051-6618211
Fax: +39 051-6606312
e-mail address of the competent person responsible for the Safety Data Sheet: sds@renneritalia.com

1.4. Emergency telephone number

For urgent inquiries refer to:
RENNER ITALIA S.p.A. - Tel. +39 051-6618211 (dal lunedì al venerdì dalle 8.30 - 13.00 e dalle 14.00 - 17.30)
ITALIA
CAV "Osp. Pediatrico Bambino Gesù" Dip. Emergenza e Accettazione DEA - Tel. +39 06-68593726
Az. Osp. Univ. Foggia - Tel. +39 800183459
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CAV Policlinico "Umberto I" - Tel. +39 06-49978000
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Tel. +39 0382-24444
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ČESKÁ REPUBLIKA
Toxikologické informační středisko Praha: (+420) 224 919 293
CROATIA
Služba za izvanredna stanja (112)
Centar za kontrolu otrovanja (01/2348-342)
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1096 Budapest, Nagyvárud tér 2.

Telefon: +36 1 476 6464 (8-16 óráig), +36 80 201 199 (éjjel-nappal hívható) magyar nyelven

LATVIA

Valsts ugunsdzesības un glabšanas dienests: (+371) 112

Saindešanas un zalu informācijas centrs: (+371) 67042473 (visu diennakti)

LITHUANIA

Apsinuodijimų kontrolės ir Informacijos biuras visą parą tel. (8 5) 236 2052

Bendras pagalbos telefonas: 112

NORWAY

Emergency number: 113

POLSKA

Numer telefonu alarmowego: +48 22 615 27 51

PORTUGAL

Centro de Informação Anti-Venenos: 800 250 250

SPAIN

Información telefónica y emergencias toxicológicas (INTCF) – tel. 91 562 04 20

AUSTRALIA & NEW ZEALAND

Poisons information Centre, Australia wide: Phone 13 11 26 - H24 Service

Police or Fire Brigade: Phone 000 Or New Zealand: 0800 764 766

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:

Acute toxicity, category 4	H332	Harmful if inhaled.
Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.
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: Danger

Hazard statements:

H332	Harmful if inhaled.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements:

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P280	Wear protective gloves / eye protection / face protection.



SECTION 2. Hazards identification ... / >>

P310	Immediately call a POISON CENTER / doctor.
P261	Avoid breathing dust / fume / gas / mist / vapours / spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P264	Wash hands thoroughly after handling.
Contains:	ALIPHATIC POLYISOCYANATE Benzene, 1,3-diisocyanatomethyl-, polymer with 1,6-diisocyanatohexane, polyethylene glycol mono-Me ether-blocked

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)
ALIPHATIC POLYISOCYANATE		
INDEX	50 ≤ x < 60	Acute Tox. 4 H332, STOT SE 3 H335, Skin Sens. 1 H317 STA Inhalation mists/powders: 1,5 mg/l
EC	500-060-2	
CAS	28182-81-2	
REACH Reg.	01-2119485796-17	
PROPYLENE CARBONATE		
INDEX	607-194-00-1	Eye Irrit. 2 H319
EC	203-572-1	
CAS	108-32-7	
REACH Reg.	01-2119537232-48-xxxx	
Benzene, 1,3-diisocyanatomethyl-, polymer with 1,6-diisocyanatohexane, polyethylene glycol mono-Me ether-blocked		
INDEX	10 ≤ x < 15	Acute Tox. 4 H332, STOT SE 3 H335, Skin Sens. 1 H317, Aquatic Chronic 3 H412 STA Inhalation mists/powders: 1,5 mg/l
EC		
CAS	1160001-30-8	

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 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.
SKIN: Remove contaminated clothing. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.
INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless authorised by a doctor.

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

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

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

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

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

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available



SECTION 8. Exposure controls/personal protection

8.1. Control parameters

PROPYLENE CARBONATE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,9	mg/l
Normal value in marine water	0,09	mg/l
Normal value for water, intermittent release	9	mg/l
Normal value of STP microorganisms	7400	mg/l
Normal value for the terrestrial compartment	0,81	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				10 mg/kg bw/d				
Inhalation			10 mg/m3	17,4 mg/m3			20 mg/m3	70,53 mg/m3
Skin				10 mg/kg bw/d				20 mg/kg bw/d

ALIPHATIC POLYISOCYANATE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,127	mg/l
Normal value in marine water	0,0127	mg/l
Normal value for fresh water sediment	266701	mg/kg
Normal value for marine water sediment	26670	mg/kg
Normal value for water, intermittent release	1,27	mg/l
Normal value of STP microorganisms	88	mg/l
Normal value for the terrestrial compartment	53183	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
Inhalation					1 mg/m3	VND	0,5 mg/m3	VND

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

Take the normal precautions for handling chemicals and apply an adequate standard of workplace hygiene.

Users must assess the risks in their workplace and adopt:

- Primary collective protective measures such as adequate natural ventilation and local extraction
- Personal protective equipment to manage the combination of residual risks

Personal protective equipment varies according to the possible exposure and hazardousness of the working conditions, so the final choice depends on the risk assessment.

HAND PROTECTION

Use category III chemical resistant gloves according to the EN 374 standard

Brief contact (splash protection) – non-exhaustive list

Suitable material: NITRILE RUBBER (NBR)

Glove thickness: greater than 0.4 mm

Breakthrough time: from 30 to 60 minutes

Breakthrough index: at least 2

The gloves must be replaced if there are signs of deterioration. In any case, users must assess the risks to determine the most suitable type of glove for the conditions of use.

SKIN PROTECTION

Wear work clothes and safety footwear that complies with EN ISO 20344

EYE PROTECTION

Wear safety mask glasses (UNI EN ISO 16321-1).

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

Use a mask with EN140 and/or EN136 approval, with an ABEK type filter (EN 14387)

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	liquid	
Colour	colourless	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	> 65 °C	
Flammability	not applicable	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	not applicable	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	5,5	
Kinematic viscosity	not available	
Solubility	soluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1,1	
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)	68,00 %	
VOC (Directive 2010/75/EU)	15,00 % - 165,00	g/litre
VOC (volatile carbon)	7,87 % - 86,53	g/litre
Explosive properties	not applicable	
Oxidising properties	not applicable	

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

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

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

10.4. Conditions to avoid

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

10.5. Incompatible materials



SECTION 10. Stability and reactivity ... / >>

Information not available

10.6. Hazardous decomposition products

Information not available

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

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 - mists / powders) of the mixture:

2,0 mg/l

ATE (Oral) of the mixture:

Not classified (no significant component)

ATE (Dermal) of the mixture:

Not classified (no significant component)

PROPYLENE CARBONATE

LD50 (Dermal):

> 2000 mg/kg

LD50 (Oral):

> 2000 mg/kg

ALIPHATIC POLYISOCYANATE

LD50 (Dermal):

> 2000 mg/kg

LD50 (Oral):

> 2500 mg/kg

LC50 (Inhalation mists/powders):

0,39 mg/l, 4h

STA (Inhalation mists/powders):

1,5 mg/l estimate from table 3.1.2 of Annex I of the CLP
(figure used for calculation of the acute toxicity estimate of the mixture)

Benzene, 1,3-diisocyanatomethyl-, polymer with 1,6-diisocyanatohexane, polyethylene glycol mono-Me ether-blocked

STA (Inhalation mists/powders):

1,5 mg/l estimate from table 3.1.2 of Annex I of the CLP
(figure used for calculation of the acute toxicity estimate of the mixture)

PROPYLENE GLYCOLDIACETATE

LD50 (Dermal):

> 2000 mg/kg

LD50 (Oral):

> 5000 mg/kg

LC50 (Inhalation vapours):

> 0,84 mg/l

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

Respiratory sensitization

Information not available



SECTION 11. Toxicological information ... / >>

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 development of the offspring

Information not available

Effects on or via lactation

Information not available

STOT - SINGLE EXPOSURE

May cause respiratory irritation

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

Information not available

Route of exposure

Information not available

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 have negative effects on aquatic environment.

12.1. Toxicity

**SECTION 12. Ecological information** ... / >>

PROPYLENE CARBONATE	
LC50 - for Fish	> 1000 mg/l/96h Cyprinus carpio
EC50 - for Crustacea	> 1000 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	> 900 mg/l/72h Scenedesmus subspicatus
ALIPHATIC POLYISOCYANATE	
LC50 - for Fish	> 100 mg/l/96h Danio rerio
EC50 - for Crustacea	> 100 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	> 1000 mg/l/72h Scenedesmus subspicatus
PROPYLENE GLYCOLDIACETATE	
LC50 - for Fish	82 mg/l/96h
EC50 - for Crustacea	237 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	273 mg/l/72h Pseudokirchneriella subcapitata

12.2. Persistence and degradability

PROPYLENE CARBONATE	
Rapidly degradable	>94%
PROPYLENE GLYCOLDIACETATE	
Rapidly degradable	69,9%

12.3. Bioaccumulative potential

PROPYLENE GLYCOLDIACETATE	
Partition coefficient: n-octanol/water	0,82

12.4. Mobility in soil

PROPYLENE GLYCOLDIACETATE	
Partition coefficient: soil/water	10

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 13. Disposal considerations**13.1. Waste treatment methods**

For disposal or recovery in EU countries, use the relevant waste code (EWC code) identified in the European Waste Catalogue. The producer of the waste must assign the EWC code according to the sector and type of process. Disposal must be carried out by an authorised waste management company.

After the producer of the waste has assigned the EWC code, the contaminated packaging must be sent for recovery or disposal in compliance with the European waste management regulations. Disposal must be carried out by an authorised waste management company.

For waste disposal or recovery in countries outside the EU, comply with the national or local regulations in force. For disposal or recovery of contaminated packaging in countries outside the EU, comply with the national or local regulations in force.

Waste transportation may be subject to regulations on transportation of hazardous goods.

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.



SECTION 14. Transport information ... / >>

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

Only for uses exempt from EU DIRECTIVE 2004/42/CE.

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

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



SECTION 15. Regulatory information ... / >>

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:

Acute Tox. 4	Acute toxicity, category 4
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
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H332	Harmful if inhaled.
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.
H412	Harmful to aquatic life with long lasting effects.

Use descriptor system:

PC 9a	Coatings and paints, thinners, paint removers
PROC 10	Roller application or brushing
PROC 11	Non industrial spraying
PROC 13	Treatment of articles by dipping and pouring
PROC 7	Industrial spraying

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

**SECTION 16. Other information ... / >>**

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 / 12 / 15 / 16.