Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

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

1.1. Product identifier

Product name	**UWS HARD ANTIFOULING PROFESSIONAL RACING NOIR**
Chemical name and synonym	**PEINTURE ANTISALISSURE CONTENANT RESINE ACRYLIQUE ET COLOPHANE**

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

Intended use **PEINTURE MARINE**

Identified Uses	Industrial	Professional	Consumer
Paint product for boating	✔	✔	✔

Uses Advised Against

Consumer - do-it-yourself: spray use

1.3. Details of the supplier of the safety data sheet

Name	**UNDERWATER SYSTEMS SAS**
Full address	**613, Route des Princes d'Orange**
District and Country	**84190 Gigondas**
	France
	Tel. +33 (0)4 90 65 01 72
	infos@underwatersystems.fr

1.4. Emergency telephone number

For urgent inquiries refer to

INRS/ORFILA : Tél : 01 45 42 59 59
http://www.centres-antipoison.net

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:

Flammable liquid, category 3	H226	Flammable liquid and vapour.
Acute toxicity, category 4	H302	Harmful if swallowed.
Serious eye damage, category 1	H318	Causes serious eye damage.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, category 3	H336	May cause drowsiness or dizziness.
Hazardous to the aquatic environment, acute toxicity, category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment, chronic toxicity, category 1	H410	Very toxic 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:

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH205	Contains epoxy constituents. May produce an allergic reaction.

Precautionary statements:

P501	Dispose of contents/container in accordance with local/regional/national/international regulation
P102	Keep out of reach of children.
P101	If medical advice is needed, have product container or label at hand.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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/ protective clothing / eye protection / face protection.

Contains: DICOPPER OXIDE
Hydrocarbons, C9, aromatics (CAS number: 64742-95-6)
COLOPHONY
ZINEB

Product not intended for uses provided for by Directive 2004/42/EC.

2.3. Other hazards

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

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

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
DICOPPER OXIDE		
INDEX 029-002-00-X EC 215-270-7 CAS 1317-39-1 REACH Reg. 01-2119513794-36-XXXX	22 ≤ x < 25	Acute Tox. 4 H302, Acute Tox. 4 H332, Eye Dam. 1 H318, Aquatic Acute 1 H400 M=100, Aquatic Chronic 1 H410 M=10 LD50 Oral: 500 mg/kg, LC50 Inhalation mists/powders: 3,34 mg/l/4h
Hydrocarbons, C9, aromatics (CAS number: 64742-95-6)		
INDEX - EC 918-668-5 CAS 128601-23-0 REACH Reg. 01-2119455851-35-XXXX	20 ≤ x < 23	Flam. Liq. 3 H226, Asp. Tox. 1 H304, STOT SE 3 H335, STOT SE 3 H336, Aquatic Chronic 2 H411, EUH066
COLOPHONY		
INDEX 650-015-00-7 EC 232-475-7 CAS 8050-09-7 REACH Reg. 01-2119480418-32-XXXX	16 ≤ x < 19	Skin Sens. 1 H317
ZINC OXIDE		
INDEX 030-013-00-7 EC 215-222-5 CAS 1314-13-2 REACH Reg. 01-2119463881-32-XXXX	4 ≤ x < 5	Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
CARBONIO AMORFO		
INDEX - EC 215-609-9 CAS 1333-86-4 REACH Reg. 01-2119384822-32-XXXX	3 ≤ x < 4	Substance with a community workplace exposure limit.
ZINEB		
INDEX 006-078-00-2 EC 235-180-1 CAS 12122-67-7	2,5 ≤ x < 3	Flam. Sol. 2 H228, Repr. 2 H361d, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
2-METHOXY-1-METHYLETHYL ACETATE		
INDEX 607-195-00-7 EC 203-603-9 CAS 108-65-6 REACH Reg. 01-2119475791-29-XXXX	2 ≤ x < 3	Flam. Liq. 3 H226, STOT SE 3 H336
Pyrithione zinc		
INDEX 613-333-00-7	0,25 ≤ x < 0,3	Repr. 1B H360D, Acute Tox. 2 H330, Acute Tox. 3 H301, STOT RE 1 H372, Eye Dam. 1 H318, Aquatic Chronic 1 H410 M=10

EC 236-671-3		LD50 Oral: 221 mg/kg, LC50 Inhalation mists/powders: 0,14 mg/l/4h
CAS 13463-41-7		
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane		
INDEX 603-073-00-2	0,1 ≤ x < 0,2	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411
EC 216-823-5		Skin Irrit. 2 H315: ≥ 5%, Eye Irrit. 2 H319: ≥ 5%
CAS 1675-54-3		
REACH Reg. 01-2119456619-26-0006		
QUARTZ		
INDEX -	0,0149 ≤ x < 0,0208	STOT RE 1 H372
EC 238-878-4		
CAS 14808-60-7		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

Supplementary information for nanoforms

CARBONIO AMORFO

Denomination	NERO DI CARBONIO AMORFO
Other identifier	SPECIAL BLACK 4

Shape

Shape 1:

Shape name	Sfere	
Category	spheroidal	
Shape	spherical	
Aspect ration (x:1)	2,99 :1	
Fraction of constituent particles in the size range 1-100 nm	100	%
Shape percentage	100	%
D10	20 - 43	nm
D50	30 - 87	nm
D90	54 - 178	nm
Specific surface area by mass	35 - 600	m2/g
Method	BET	

Crystallinity

Crystalline structure 1:

Structure	amorphous	
Percentage	100	%

Surface functionalisation / treatment

Surface treatments 1:

Surface treatment applied	yes
The set contain both treated and non-surface treated nanoforms	yes
Surface treatments	external layer hydrophobic
Process description	Oxidation

Actives substances PT21

Dicopper oxide 23,00 % (368,0 g/L)

Zineb 2,50 % (40,0 g/L)
Pyrithione zinc 0,25 % (4,0 g/L)

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. Rinse skin with a shower immediately. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

Pyrithione zinc
Poisoning symptoms can appear even after several hours.
In case of malaise consult a doctor.
If inhaled, take the person to fresh air and call a doctor immediately.
In case of skin contact, immediately remove contaminated clothing and shoes and wash it off with plenty of soap and water.
In case of contact with eyes, rinse with plenty of water also under the eyelids for at least 15 minutes and call a doctor / poison control center.
If ingested, rinse the mouth with plenty of water (if the person is conscious). Do not induce vomiting. If vomiting occurs, keep head down to prevent vomit from going into the lungs. contact a physician / poison control center immediately.

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

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

Pyrithione zinc
In case of contact, it can cause permanent eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

Pyrithione zinc
Treat symptomatically.

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.
UNSUITABLE EXTINGUISHING EQUIPMENT
Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Excess pressure may form in containers exposed to fire at a risk of explosion. 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.

Send away individuals who are not suitably equipped. Use explosion-proof equipment. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

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

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 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.

2-METHOXY-1-METHYLETHYL ACETATE
Store in an inert atmosphere, sheletered from moisture because it hydrolises easily.

Storage class TRGS 510 (Germany) : 3

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory references:

DEU	Deutschland	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	España	Límites de exposición profesional para agentes químicos en España 2021
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
NLD	Nederland	Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit
PRT	Portugal	Decreto-Lei n.º 1/2021 de 6 de janeiro, valores-limite de exposição profissional indicativos para os agentes químicos. Decreto-Lei n.º 35/2020 de 13 de julho, proteção dos trabalhadores contra os riscos ligados à exposição durante o trabalho a agentes cancerígenos ou mutagénicos
POL	Polska	Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006
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 2022

DICOPPER OXIDE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
MAK	DEU	0,01		0,02			
VLA	ESP	0,01				RESP	Como Cu
NDS/NDSCh	POL	0,2					Na Cu
WEL	GBR	1		2			As Cu

Predicted no-effect concentration - PNEC		
Normal value in fresh water	7,8	µl/g
Normal value in marine water	5,2	µl/g
Normal value for fresh water sediment	87	mg/kg
Normal value for marine water sediment	676	mg/kg
Normal value of STP microorganisms	0,23	mg/l
Normal value for the terrestrial compartment	65	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral		82 µg/kg bw/day		41 µg/kg bw/day				
Inhalation	NPI	NPI	NPI	NPI	NPI	NPI	1 mg/m3	1 mg/m3
Skin	NPI	NPI	NPI	NPI	NPI	NPI	NPI	137 mg/kg bw/d

Hydrocarbons, C9, aromatics (CAS number: 64742-95-6)

Predicted no-effect concentration - PNEC	
Normal value in fresh water	NPI
Normal value in marine water	NPI
Normal value for fresh water sediment	NPI
Normal value for marine water sediment	NPI
Normal value for water, intermittent release	NPI
Normal value of STP microorganisms	NPI
Normal value for the food chain (secondary poisoning)	NPI
Normal value for the terrestrial compartment	NPI
Normal value for the atmosphere	NPI

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				11 mg/kg bw/d				
Inhalation				32 mg/m3				150 mg/m3
Skin				11 mg/kg bw/d				25 mg/kg bw/d

CALCIUM CARBONATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLEP	FRA	10				
NDS/NDSCh	POL	10				INHAL

Predicted no-effect concentration - PNEC		
Normal value of STP microorganisms	100	mg/l

COLOPHONY

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	ROU	0,1				
WEL	GBR	0,05		0,15		
TLV-ACGIH		0,001				

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0	mg/l
Normal value in marine water	0	mg/l
Normal value for fresh water sediment	0,02	mg/kg
Normal value for marine water sediment	0	mg/kg
Normal value of STP microorganisms	1000	mg/l
Normal value for the food chain (secondary poisoning)	0	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				15 mg/kg				
Inhalation				52 mg/m3				176 mg/m3
Skin				15 mg/kg				25 mg/kg

ZINC OXIDE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
MAK	DEU	2		4		INHAL	
MAK	DEU	0,1		0,4		RESP	
VLA	ESP	2		10			
VLEP	FRA	5					
NDS/NDSCh	POL	5		10		INHAL	Na Zn
TLV	ROU	5		10			Fumuri

TLV-ACGIH	2	10		RESP

Predicted no-effect concentration - PNEC		
Normal value in fresh water	14,4	µg/L
Normal value in marine water	7,2	µg/L
Normal value for fresh water sediment	146,9	mg/kg/d
Normal value for marine water sediment	162,2	mg/kg/d
Normal value of STP microorganisms	100	µg/L
Normal value for the terrestrial compartment	831	mg/kg/d
Normal value for the atmosphere	NPI	

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral		NPI		830 µg/kg bw/d				
Inhalation	NPI	NPI	NPI	2,5 mg/m3	NPI	NPI	NPI	5 mg/m3
Skin	NPI	NPI	NPI	83 mg/kg bw/d	NPI	NPI	NPI	83 mg/kg bw/d

CARBONIO AMORFO

Threshold Limit Value

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

Predicted no-effect concentration - PNEC		
Normal value in fresh water	1	mg/l
Normal value in marine water	100	µg/L
Normal value for fresh water sediment	NPI	
Normal value for marine water sediment	NPI	
Normal value for water, intermittent release	1	mg/l
Normal value for the food chain (secondary poisoning)	NPI	
Normal value for the terrestrial compartment	NPI	
Normal value for the atmosphere	NPI	

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral		NPI		NPI				
Inhalation	NPI	NPI	NPI	60 µg/m³	NPI	NPI	500 µg/m³	1 mg/m3
Skin	NPI	NPI	NPI	NPI	NPI	NPI	NPI	NPI

2-METHOXY-1-METHYLETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	270	50	270	50	
MAK	DEU	270	50	270	50	
VLA	ESP	275	50	550	100	SKIN
VLEP	FRA	275	50	550	100	SKIN
VLEP	ITA	275	50	550	100	SKIN
TGG	NLD	550				

VLE	PRT	275	50	550	100	SKIN
NDS/NDSCh	POL	260		520		SKIN
TLV	ROU	275	50	550	100	SKIN
WEL	GBR	274	50	548	100	SKIN
OEL	EU	275	50	550	100	SKIN

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,635	mg/l
Normal value in marine water	0,0635	mg/l
Normal value for fresh water sediment	3,29	mg/kg
Normal value for marine water sediment	0,329	mg/kg
Normal value of STP microorganisms	100	mg/l
Normal value for the food chain (secondary poisoning)	NPI	
Normal value for the terrestrial compartment	0,29	mg/kg
Normal value for the atmosphere	NPI	

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral	500 mg/kg bw/d		36 mg/kg bw/d	1,67 mg/kg				
Inhalation	NPI	NPI	33 mg/m3	33 mg/m3	550 mg/m3	NPI	NPI	275 mg/m3
Skin	NPI	NPI	NPI	320 mg/kg bw/d	NPI	NPI	NPI	796 mg/kg bw/d

Pyrithione zinc

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
OEL	EU	2,5				

Predicted no-effect concentration - PNEC		
Normal value in fresh water	90	ng/l
Normal value in marine water	90	ng/l
Normal value for fresh water sediment	0,0095	mg/kg/d
Normal value for marine water sediment	0,0095	mg/kg/d
Normal value of STP microorganisms	0,01	mg/l
Normal value for the terrestrial compartment	1,02	mg/kg/d

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Skin							VND	0.01 mg/kg/d

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,006	mg/l
Normal value in marine water	0,001	mg/l
Normal value for fresh water sediment	341	µg/kg/dw
Normal value for marine water sediment	34,1	µg/kg/dw
Normal value of STP microorganisms	10	mg/l
Normal value for the food chain (secondary poisoning)	11	mg/kg

Normal value for the atmosphere	NPI

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral		NPI		500 µg/kg bw/day				
Inhalation		NPI	0,012 mg/l	870 mg/m3		NPI		4,93 mg/m3
Skin		NPI		89.3 µg/kg bw/day	NPI	NPI		750 µg/kg bw/day

QUARTZ

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP		0,05			RESP
VLEP	FRA	0,1				RESP
VLEP	ITA	0,1				RESP
TGG	NLD	0,075				RESP
VLE	PRT	0,025				RESP
NDS/NDSCh	POL	0,1				RESP
TLV	ROU	0,1				RESP
OEL	EU	0,1				RESP
TLV-ACGIH		0,025				RESP

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 ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

TLV of solvent mixture: 534 mg/m3

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION
Protect hands with category III work gloves.
The following should be considered when choosing work glove material (see standard EN 374): compatibility, degradation, failure time and permeability.
The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

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.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

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
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a type AX filter, whose limit of use will be defined by the manufacturer (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.

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	black	
Odour	caratteristico di nafta petrolio	
Melting point / freezing point	not available	
Initial boiling point	> 35 °C	
Flammability	flammable liquid	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	39 °C	Method:Abel-Pensky Closed Cup
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	not available	Reason for missing data:substance/mixture is non-soluble (in water)
Kinematic viscosity	>20,5 mm2/sec (40°C)	Method:v cinematica = v g/mm·s a 40°C / g/mm3
Dynamic viscosity	2'15" ± 15"	Method:Coupe Ford Ø 4 Temperature: 20 °C
Solubility	insoluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	1,59 mmHg	Method:Valore calcolato
Density and/or relative density	1600 ± 50 g/L kg/l	Method:OECD 109 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)	77,07 %				Method:Valore calcolato
VOC (Directive 2010/75/EU)	22,93 %	-	366,87	g/litre	
VOC (volatile carbon)	19,83 %	-	317,29	g/litre	

SECTION 10. Stability and reactivity

10.1. Reactivity

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

CALCIUM CARBONATE

Decomposes at temperatures above 800°C/1472°F.

2-METHOXY-1-METHYLETHYL ACETATE

Stable in normal conditions of use and storage.

Con l'aria può dare lentamente perossidi che esplodono per aumento di temperatura.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

2-METHOXY-1-METHYLETHYL ACETATE

May react violently with: oxidising substances,strong acids,alkaline metals.

10.4. Conditions to avoid

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

Pyrithione zinc

Evitare l'esposizione a: luce solare diretta temperature estremamente elevate o estremamente basse

10.5. Incompatible materials

CALCIUM CARBONATE

Incompatible with: acids.

2-METHOXY-1-METHYLETHYL ACETATE

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

Pyrithione zinc

Keep away from: strong oxidising agents,strong acids,strong alkalis.

10.6. Hazardous decomposition products

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

CALCIUM CARBONATE

May develop: calcium oxides,carbon oxides.

Pyrithione zinc

Può sviluppare: anidride carbonica monossido di carbonio composti dello zolfo azotoguando

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

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

Metabolism, toxicokinetics, mechanism of action and other information

2-METHOXY-1-METHYLETHYL ACETATE
La principale via di entrata è quella cutanea, mentre quella respiratoria è meno importante, data la bassa tensione di vapore del prodotto.

Information on likely routes of exposure

2-METHOXY-1-METHYLETHYL ACETATE
LAVORATORI: inalazione; contatto con la cute.

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

2-METHOXY-1-METHYLETHYL ACETATE
Al di sopra di 100 ppm si ha irritazione delle mucose oculari, nasali e orofaringee. A 1000 ppm si notano turbe nell'equilibrio e irritazione severa agli occhi. Gli esami clinici e biologici praticati sui volontari esposti non hanno rivelato anomalie. L'acetato produce maggiore irritazione cutanea ed oculare per contatto diretto. Non vengono riportati effetti cronici sull'uomo (INCR, 2010).

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation - mists / powders) of the mixture:	> 5 mg/l
ATE (Oral) of the mixture:	1947,14 mg/kg
ATE (Dermal) of the mixture:	Not classified (no significant component)

DICOPPER OXIDE

LD50 (Dermal):	> 2000 mg/kg
LD50 (Oral):	500 mg/kg
LC50 (Inhalation mists/powders):	3,34 mg/l/4h

CALCIUM CARBONATE

LD50 (Oral):	6450 mg/kg Rat

COLOPHONY

LD50 (Dermal):	> 2000 mg/kg RAT
LD50 (Oral):	> 2800 mg/kg RAT

ZINC OXIDE

LD50 (Dermal):	> 2000 mg/kg RAT
LD50 (Oral):	> 5000 mg/kg RAT
LC50 (Inhalation vapours):	> 5,7 ppm/4h RAT

Vinyl chloride copolymère

LD50 (Oral):	> 2000 mg/kg RATTO

CARBONIO AMORFO

LD50 (Oral):	> 8000 mg/kg RATTO

ZINEB

LD50 (Dermal):	> 2500 mg/kg Rat
LD50 (Oral):	> 1000 mg/kg Rat
LC50 (Inhalation mists/powders):	> 5 mg/l/1h (air) Rat

2-METHOXY-1-METHYLETHYL ACETATE

LD50 (Dermal):	> 3160 mg/kg Rat
LD50 (Oral):	8500 mg/kg Rat
LC50 (Inhalation vapours):	6193 mg/m3/4h Ratto

CLOROPARAFFINA

LD50 (Dermal):	> 4000 mg/kg RATTO
LD50 (Oral):	> 10000 mg/kg RATTO

ZEOLITE

LD50 (Dermal):	> 2000 mg/kg Rabbit
LD50 (Oral):	> 5000 mg/kg Rat
LC50 (Inhalation mists/powders):	> 15 mg/l/1h Rat

Pyrithione zinc

LD50 (Dermal):	> 2000 mg/kg Coniglio
LD50 (Oral):	221 mg/kg Ratto
LC50 (Inhalation mists/powders):	0,14 mg/l/4h Ratto - maschio e femmina

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

LD50 (Dermal):	> 23000 mg/kg CONIGLIO
LD50 (Oral):	> 15000 mg/kg RATTO

QUARTZ

LD50 (Oral):	> 500 mg/kg

SKIN CORROSION / IRRITATION

Repeated exposure may cause skin dryness or cracking.

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

May cause respiratory irritation

May cause drowsiness or dizziness

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 Viscosity: >20,5 mm2/sec (40°C)

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 highly toxic for aquatic organisms. In the long term, it have negative effects on aquatic environment.

12.1. Toxicity

COLOPHONY	
LC50 - for Fish	> 60,3 mg/l/96h
EC50 - for Crustacea	> 911 mg/l/48h
EC50 - for Algae / Aquatic Plants	> 1000 mg/l/72h

CALCIUM CARBONATE	
EC50 - for Algae / Aquatic Plants	> 14 mg/l/72h
2-METHOXY-1-METHYLETHYL ACETATE	
LC50 - for Fish	> 100 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	> 408 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	> 100 mg/l/72h
Chronic NOEC for Fish	47,5 mg/l Oncothynchus mykiss
Chronic NOEC for Crustacea	> 99 mg/l Daphnia magna
Chronic NOEC for Algae / Aquatic Plants	> 999 mg/l Selenastrum capricornutum
DICOPPER OXIDE	
LC50 - for Fish	0,0384 mg/l/96h Pimephales promelas
EC50 - for Crustacea	0,0038 mg/l/48h Daphnia similis
EC50 - for Algae / Aquatic Plants	0,0238 mg/l/72h Pseudokirchneriella subcapitata
Chronic NOEC for Fish	0,0116 mg/l Oncorhynchus mykiss
Chronic NOEC for Crustacea	0,0126 mg/l Daphnia magna
Chronic NOEC for Algae / Aquatic Plants	0,0029 mg/l Phaeodactylum tricornutumto
ZINC OXIDE	
LC50 - for Fish	1,1 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	1,7 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	0,14 mg/l/72h Pseudokirchnerella subcapitata
Chronic NOEC for Fish	0,53 mg/l
Chronic NOEC for Algae / Aquatic Plants	0,024 mg/l
ZINEB	
LC50 - for Fish	> 7,2 mg/l/96h Lepomis macrochirus (Bluegill)
EC50 - for Crustacea	> 0,97 mg/l/48h Daphnia magna (Water flea)
Hydrocarbons, C9, aromatics (CAS number: 64742-95-6)	
EC50 - for Algae / Aquatic Plants	> 290 µg/l/72h 290 - 420 µg/L
ZEOLITE	
LC50 - for Fish	> 680 mg/l/96h fish
EC50 - for Crustacea	> 100 mg/l/48h Daphnia
EC50 - for Algae / Aquatic Plants	> 300 mg/l/72h Algae
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	
LC50 - for Fish	> 2 mg/l/96h PESCI
EC50 - for Crustacea	> 1,8 mg/l/48h DAFNIE
EC50 - for Algae / Aquatic Plants	> 11 mg/l/72h
EC10 for Algae / Aquatic Plants	> 4,2 mg/l/72h
CARBONIO AMORFO	

LC50 - for Fish	> 1000 mg/l/96h Leuciscus idus
EC50 - for Algae / Aquatic Plants	> 10000 mg/l/72h Scenedesmus subspicatus ; OCSE 201
Chronic NOEC for Fish	> 1000 mg/l Leuciscus idus
Chronic NOEC for Algae / Aquatic Plants	> 10000 mg/l Scenedesmus subspicatus ; OCSE 201

Pyrithione zinc

LC50 - for Fish	> 0,0026 mg/l/96h Cavedano americano
EC50 - for Algae / Aquatic Plants	0,00088 mg/l/72h Skeletonema costatum
EC10 for Algae / Aquatic Plants	0,00068 mg/l/72h Skeletonema costatum

12.2. Persistence and degradability

COLOPHONY

Solubility in water	0,1 - 100 mg/l

Rapidly degradable

CALCIUM CARBONATE

Solubility in water	0,1 - 100 mg/l

2-METHOXY-1-METHYLETHYL ACETATE

Solubility in water	> 10000 mg/l

Rapidly degradable

DICOPPER OXIDE

Solubility in water	0,639 mg/l

NOT rapidly degradable

ZINC OXIDE

Solubility in water	> 1,2 mg/l 1.2 - 2.9 mg/L @ 20 °C

NOT rapidly degradable

Hydrocarbons, C9, aromatics (CAS number: 64742-95-6)

Solubility in water	> 93 mg/l

Rapidly degradable

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Solubility in water	> 6,9 mg/l 0,1 - 100

NOT rapidly degradable

CARBONIO AMORFO

Solubility in water	> 1 mg/l

Pyrithione zinc

Rapidly degradable

12.3. Bioaccumulative potential

COLOPHONY

Partition coefficient: n-octanol/water	3
BCF	56,23

2-METHOXY-1-METHYLETHYL ACETATE

Partition coefficient: n-octanol/water	1,2

ZINC OXIDE

Partition coefficient: n-octanol/water	< 4
BCF	> 175

ZINEB

Partition coefficient: n-octanol/water	> 1,3
BCF	> 225 µg/l Oncorhynchus mykiss (rainbow trout)

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Partition coefficient: n-octanol/water	> 3242 Kow 3.242 @ 25 °C
BCF	31

Pyrithione zinc

Partition coefficient: n-octanol/water	< 4

12.4. Mobility in soil

COLOPHONY

Partition coefficient: soil/water	3,7289

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Partition coefficient: soil/water	2,65

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

Information not available

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Waste transportation may be subject to ADR restrictions.

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

SECTION 14. Transport information

14.1. UN number or ID number

ADR / RID, IMDG, IATA: 1263

14.2. UN proper shipping name

ADR / RID: PAINT or PAINT RELATED MATERIAL
IMDG: PAINT or PAINT RELATED MATERIAL
IATA: PAINT or PAINT RELATED MATERIAL

14.3. Transport hazard class(es)

ADR / RID: Class: 3 Label: 3
IMDG: Class: 3 Label: 3
IATA: Class: 3 Label: 3

14.4. Packing group

ADR / RID, IMDG, IATA: III

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous
IMDG: Marine Pollutant
IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 30	Limited Quantities: 5 L	Tunnel restriction code: (D/E)
	Special provision: 163, 367, 650		
IMDG:	EMS: F-E, S-E	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 220 L	Packaging instructions: 366
	Passengers:	Maximum quantity: 60 L	Packaging instructions: 355
	Special provision:	A3, A72, A192	

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: P5c-E1

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product

Point 3 - 40

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 ≥ than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

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

ZINEB

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 3: Severe hazard to waters

15.2. Chemical safety assessment

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

DICOPPER OXIDE

2-METHOXY-1-METHYLETHYL ACETATE

SECTION 16. Other information

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

Flam. Liq. 3	Flammable liquid, category 3
Flam. Sol. 2	Flammable solid, category 2
Repr. 1B	Reproductive toxicity, category 1B
Repr. 2	Reproductive toxicity, category 2
Acute Tox. 2	Acute toxicity, category 2
Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
STOT RE 1	Specific target organ toxicity - repeated exposure, category 1
Asp. Tox. 1	Aspiration hazard, category 1
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 Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H226	Flammable liquid and vapour.
H228	Flammable solid.
H360D	May damage the unborn child.
H361d	Suspected of damaging the unborn child.
H330	Fatal if inhaled.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H304	May be fatal if swallowed and enters airways.
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.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH205	Contains epoxy constituents. May produce an allergic reaction.

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
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:
01 / 02 / 03 / 07 / 08 / 09 / 11 / 14 / 15 / 16.