Safety Data Sheet

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

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

1.1. Product identifier

Code: **160**
Product name **W3 IMPERMEABILIZZANTE (B)**

UFI : **H4C2-J0RQ-T00K-NRF1**

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

Intended use **TRICOMPONENT EPOXY COATING.**

1.3. Details of the supplier of the safety data sheet

Name **NORD RESINE S.p.A.**
Full address **Via Fornace Vecchia, 79**
District and Country **31058 Susegana (TV)**
Italia
Tel. +39 0438-437511
Fax +39 0438-435155

e-mail address of the competent person responsible for the Safety Data Sheet **annabreda@nordresine.com**

Supplier: **NORD RESINE S.p.A.**

1.4. Emergency telephone number

For urgent inquiries refer to

Ireland
National Poisons Information Centre
+353 018092166
+353 018092566

Malta
Malta Competition and Consumer Affairs Authority (MCCAA)
+356 2395 2000

Belgium
Centre Antipoisons: +32 022649636

Germany
BfR Bundesinstitut für Risikobewertung: +49 30184120

Netherlands
National Poisons Information Center / University Medical Center Utrecht
+31 88 75 585 61

Croatia
Croatian Institute of Public Health, Division for Toxicology: +38514686910

Sveden
Swedish Poisons Information Centre: +46104566750

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.

SECTION 2. Hazards identification ... / >>

Hazard classification and indication:

Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
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:

H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

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.
P310	Immediately call a POISON CENTER / doctor.
P273	Avoid release to the environment.
P391	Collect spillage.
P261	Avoid breathing dust.

Contains:

Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine
Formaldehyde, polymer with N1-(2-aminoethyl)-N2-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine, 2, 2'-[1,4-butanediylbis(oxymethyle)]
2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
MALEIC ANHYDRIDE
Amines, polyethylenepoly-, triethylenetetramine fraction
Amines, polyethylenepoly-, tetraethylenepentamine fraction
N,N-dimethyl-1,3-diaminopropane

The product is classified both in acute and long-term aquatic hazard categories: it is possible to use only hazard statement H410 on the label.

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)
Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine			
INDEX		20 ≤ x < 25	**Eye Dam. 1 H318, Skin Irrit. 2 H315, Skin Sens. 1A H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1**
EC	*500-191-5*		
CAS	*68082-29-1*		
REACH Reg.	*01-2119972320-44*		
1-METHOXY-2-PROPANOL			
INDEX	*603-064-00-3*	5 ≤ x < 7	**Flam. Liq. 3 H226, STOT SE 3 H336**
EC	*203-539-1*		
CAS	*107-98-2*		
REACH Reg.	*01-2119457435-35*		
Formaldehyde, polymer with N1-(2-aminoethyl)-N2-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine, 2, 2'-[1,4-butanediylbis(oxymethyle)]			
INDEX		3 ≤ x < 5	**Skin Sens. 1 H317, Aquatic Chronic 2 H411**
EC	*885-937-0*		
CAS	*180583-06-6*		
2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL			
INDEX	*603-069-00-0*	1 ≤ x < 3	**Acute Tox. 4 H302, Skin Corr. 1C H314, Eye Dam. 1 H318**
EC	*202-013-9*		**ATE Oral: 500 mg/kg**
CAS	*90-72-2*		
REACH Reg.	*01-2119560597-27*		
N,N-dimethyl-1,3-diaminopropane			
INDEX	*612-061-00-6*	0,5 ≤ x < 1	**Flam. Liq. 3 H226, Repr. 2 H361d, Acute Tox. 4 H302, Acute Tox. 4 H312, Skin Corr. 1B H314, Eye Dam. 1 H318, STOT SE 3 H335, Skin Sens. 1 H317**
EC	*203-680-9*		**LD50 Oral: 410 mg/kg, LD50 Dermal: >1000 mg/kg**
CAS	*109-55-7*		
REACH Reg.	*01-2119486842-27*		
Amines, polyethylenepoly-, tetraethylenepentamine fraction			
INDEX		0,1 ≤ x < 0,25	**Acute Tox. 4 H302, Acute Tox. 4 H312, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1**
EC	*292-587-7*		**ATE Oral: 500 mg/kg, LD50 Dermal: 1260 mg/kg**
CAS	*90640-66-7*		
REACH Reg.	*01-2119487290-37*		
Amines, polyethylenepoly-, triethylenetetramine fraction			
INDEX		0,1 ≤ x < 0,5	**Acute Tox. 4 H302, Acute Tox. 4 H312, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Chronic 3 H412, EUH071**
EC	*292-588-2*		**LD50 Oral: 1716 mg/kg, LD50 Dermal: 1465 mg/kg**
CAS	*90640-67-8*		
REACH Reg.	*01-2119487919-13*		
MALEIC ANHYDRIDE			
INDEX	*607-096-00-9*	0 < x < 0,001	**Acute Tox. 4 H302, STOT RE 1 H372, Skin Corr. 1B H314, Eye Dam. 1 H318, Resp. Sens. 1 H334, Skin Sens. 1A H317, EUH071**
EC	*203-571-6*		**Skin Sens. 1A H317: ≥ 0,001%**
CAS	*108-31-6*		**LD50 Oral: 1090 mg/kg**
REACH Reg.	*01-2119472428-31*		

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

In case of doubt or in the presence of symptoms contact a doctor and show him this document.
In case of more severe symptoms, ask for immediate medical aid.
EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Take off immediately all contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.

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

INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Do not give anything by mouth to an unconscious person. Get medical advice/attention.
INHALATION: Remove victim to fresh air, away from the accident scene. In the event of respiratory symptoms (coughing, wheezing, breathing difficulty, asthma) keep the victim in a comfortable position for breathing. If necessary administer oxygen. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

Rescuer protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

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

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

DELAYED EFFECTS: Based on the information currently available, there are no known cases of delayed effects following exposure to this product.

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

Immediately call a POISON CENTER / doctor.
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment: see section 4.1

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

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.

SECTION 6. Accidental release measures ... / >>

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. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. 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.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory references:

ALB	Shqipëria	VENDIM Nr. 522, datë 6.8.2014 PËR MIRATIMIN E RREGULLORES “PËR MBROJTJEN E SIGURISË DHE SHËNDETIT TË PUNËMARRËSVE NGA RISQET E LIDHURA ME AGJENTËT KIMIKË NË PUNË”
CZE	Česká Republika	NAŘÍZENÍ VLÁDY ze dne 18. října 2023, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, ve znění pozdějších předpisů
DEU	Deutschland	WirkungDosisNOAELMAK-und BAT-Werte-Liste 2024 Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe
ESP	España	Límites de exposición profesional para agentes químicos en España 2024
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en FranceDécret n° 2021-1849 du 28 décembre 2021
GRC	Ελλάδα	Π.Δ. 26/2020 (ΦΕΚ 50/Α` 6.3.2020) Εναρμόνιση της ελληνικής νομοθεσίας προς τις διατάξεις των οδηγιών 2017/2398/ΕΕ, 2019/130/ΕΕ και 2019/983/ΕΕ «για την τροποποίηση της οδηγίας 2004/37/ΕΚ ’’σχετικά με την προστασία των εργαζομένων από τους κινδύνους που συνδέονται με την έκθεση σε καρκινογόνους ή μεταλλαξιγόνους παράγοντες κατά την εργασία’’»
HUN	Magyarország	Az innovációért és technológiáért felelős miniszter 5/2020. (II. 6.) ITM rendelete a kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
HRV	Hrvatska	PRAVILNIK O IZMJENAMA I DOPUNAMA PRAVILNIKA O ZAŠTITI RADNIKA OD IZLOŽENOSTI OPASNIM KEMIKALIJAMA NA RADU, GRANIČNIM VRIJEDNOSTIMA IZLOŽENOSTI I BIOLOŠKIM GRANIČNIM VRIJEDNOSTIMA
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
NLD	Nederland	Regeling van de Minister van Sociale Zaken en Werkgelegenheid van 13 mei2024, nr. 2024-0000092805, tot wijziging van deArbeidsomstandighedenregeling in verband met de implementatie vanRichtlijn 2022/431
PRT	Portugal	Decreto-Lei n.º 102/2024, de 4 de dezembro. Sumário: Transpõe para a ordem jurídica interna a Diretiva (UE) 2022/431, relativa à proteção dos trabalhadores contra riscos ligados à exposição a agentes cancerígenos ou mutagénicos e procede à quarta alteração
POL	Polska	ROZPORZĄDZENIE MINISTRA RODZINY, PRACY I POLITYKI SPOŁECZNEJ z dnia 24 czerwca 2024 r. zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
ROU	România	HOTĂRÂRE nr. 179 din 28 februarie 2024 pentru modificarea şi completarea Hotărârii Guvernului nr. 1.093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi ca
RUS	Россия	ПОСТАНОВЛЕНИЕ от 13 февраля 2018 г. N 25 ОБ УТВЕРЖДЕНИИ ГИГИЕНИЧЕСКИХ НОРМАТИВОВ ГН 2.2.5.3532-18 "ПРЕДЕЛЬНО ДОПУСТИМЫЕ КОНЦЕНТРАЦИИ (ПДК)

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

		ВРЕДНЫХ ВЕЩЕСТВ В ВОЗДУХЕ РАБОЧЕЙ ЗОНЫ"
SVN	Slovenija	Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti rakotvornim, mutagenim ali reprotoksičnim snovem pri delu. Ljubljana, četrtek 4. 4. 2024
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.
	ACGIH	ACGIH 2025

1-METHOXY-2-PROPANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
TLV	ALB	375	100	568	150	SKIN	
TLV	CZE	270	72,09	550	146,84	SKIN	
AGW	DEU	370	100	740	200		
MAK	DEU	370	100	740	200		
VLA	ESP	375	100	568	150	SKIN	
VLEP	FRA	188	50	375	100	SKIN	
TLV	GRC	360	100	1080	300		
AK	HUN	375	100	568	150	SKIN	
GVI/KGVI	HRV	375	100	568	150		
VLEP	ITA	375	100	568	150	SKIN	Allegato XXXVIII D.Lgs. 81/08
TGG	NLD	375		563		SKIN	
VLE	PRT	375	100	568	150		
NDS/NDSCh	POL	180		360		SKIN	
TLV	ROU	375	100	568	150	SKIN	
MV	SVN	375	100	568	150	SKIN	
WEL	GBR	375	100	560	150	SKIN	
OEL	EU	375	100	568	150	SKIN	
ACGIH		184	50	368	100		

Predicted no-effect concentration - PNEC

Normal value in fresh water	10	mg/l
Normal value in marine water	1	mg/l
Normal value for fresh water sediment	52,3	mg/kg
Normal value for marine water sediment	5,2	mg/kg
Normal value for water, intermittent release	100	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	4,59	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		NPI		33 mg/kg bw/d				
Inhalation		NPI	NPI	43,9 mg/m3	553,5 mg/m3	553,5 mg/m3	NPI	369 mg/m3
Skin		NPI	NPI	78 mg/kg bw/d	NPI	NPI	NPI	183 mg/kg bw/d

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

MALEIC ANHYDRIDE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	1		2		
AGW	DEU	0,081	0,02	0,081	0,02	11
MAK	DEU	0,081	0,02	0,081 (C)	0,02 (C)	C = 0,20 mg/m3
VLA	ESP	0,4	0,1			
VLEP	FRA			1		
TLV	GRC	1				
AK	HUN	0,08	0,2	0,08	0,2	
GVI/KGVI	HRV	0,41	0,1	0,8	0,2	INHAL
GVI/KGVI	HRV	0,41	0,1	0,8	0,2	SKIN
NDS/NDSCh	POL	0,5		1		SKIN
TLV	ROU	1	0,25	3	0,75	
ПДК	RUS			1		п + а, А
MV	SVN	0,41	0,1	0,41	0,1	
WEL	GBR	1		3		
ACGIH		0,01	0,0025			INHAL

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,038	mg/l
Normal value in marine water	0,004	mg/l
Normal value for fresh water sediment	0,296	mg/kg/d
Normal value for marine water sediment	0,03	mg/kg/d
Normal value of STP microorganisms	44,6	mg/l
Normal value for the terrestrial compartment	0,037	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
Inhalation					0,2 mg/m3	0,2 mg/m3	0,081 mg/m3	0,081 mg/m3

N,N-dimethyl-1,3-diaminopropane

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0728	mg/l
Normal value in marine water	0,00728	mg/l
Normal value for fresh water sediment	0,735	mg/kg/d
Normal value for marine water sediment	0,0735	mg/kg/d
Normal value for marine water, intermittent release	0,34	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,104	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
Inhalation								1,2 mg/m3

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

Amines, polyethylenepoly-, triethylenetetramine fraction

Predicted no-effect concentration - PNEC		
Normal value in fresh water	26,8	µg/L
Normal value in marine water	200	µg/L
Normal value for fresh water sediment	8,572	mg/kg
Normal value for marine water sediment	857,2	µg/kg
Normal value for water, intermittent release	20	µg/L
Normal value for marine water, intermittent release	2,68	µg/L
Normal value for fresh water, intermittent release	0,02	mg/l
Normal value of STP microorganisms	130	µg/L
Normal value for the terrestrial compartment	1,25	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		LOW		140,0 µg/kg				
Inhalation		NEA	HIGH	96,0 µg/m³	HIGH	NEA	HIGH	540,0 µg/m³
Skin		HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH

Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine

Predicted no-effect concentration - PNEC		
Normal value in fresh water	2,2	µg/L
Normal value in marine water	0,22	µg/L
Normal value for fresh water sediment	2200000	mg/kg
Normal value for marine water sediment	220000	mg/kg
Normal value of STP microorganisms	3,84	mg/l
Normal value for the food chain (secondary poisoning)	NEA	
Normal value for the terrestrial compartment	440000	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						5 mg/kg bw/d
Inhalation		NPI	NEA	49,3 mg/m3	NEA	NPI	NEA	8,7 mg/m3
Skin		NPI	HIGH	5 mg/kg bw/d	HIGH	NPI	HIGH	14 mg/kg bw/d

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

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL

Predicted no-effect concentration - PNEC

Normal value in fresh water	46	µg/L
Normal value in marine water	460	µg/L
Normal value for fresh water sediment	262,1	µg/kg
Normal value for marine water sediment	26,211	µg/kg
Normal value for water, intermittent release	46	µg/L
Normal value for marine water, intermittent release	4,6	µg/L
Normal value of STP microorganisms	200	µg/L
Normal value for the terrestrial compartment	25,4	µg/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		75,0 µg/kg				
Inhalation		130,0 µg/m³	MED	130,0 µg/m³	MED	2,1 mg/m³	MED	530,0 µg/m³
Skin		75,0 µg/kg	MED	75,0 µg/kg	MED	600,0 µg/kg	MED	150,0 µg/kg

Amines, polyethylenepoly-, tetraethylenepentamine fraction

Predicted no-effect concentration - PNEC

Normal value in fresh water	10	µg/L
Normal value in marine water	1	µg/L
Normal value for fresh water sediment	3,198	mg/kg
Normal value for marine water sediment	319,8	µg/kg
Normal value for water, intermittent release	68	µg/L
Normal value for marine water, intermittent release	1	µg/L
Normal value for fresh water, intermittent release	0,007	mg/l
Normal value of STP microorganisms	4,6	mg/l
Normal value for the terrestrial compartment	2,5	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		210,0 µg/kg				
Inhalation		NEA	HIGH	140,0 µg/m³	HIGH	NEA	HIGH	820,0 µg/m³
Skin		HIGH	20,8 µg/cm²	NPI	HIGH	HIGH	250,0 µg/cm²	NPI

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.

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, permeability time.
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.
Protect your hands with gloves of the following type:
Material: Laminated film - LLDPE
Thickness: 0,06 mm
Breakthrough time: 480 min

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

Material: Butyl rubber (IIR)
Thickness: 0,5 mm
Breakthrough time: 480 min
SKIN PROTECTION
Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.
EYE PROTECTION
Wear airtight protective goggles (see standard EN ISO 16321).
RESPIRATORY PROTECTION
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. Use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387).
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		yellow		
Odour		amino		
Melting point / freezing point		not determined		Reason for missing data:not determined
Initial boiling point	>	100	°C	
Flammability		not determined		
Lower explosive limit		not determined		Reason for missing data:not determined
Upper explosive limit		not determined		Reason for missing data:not determined
Flash point	>	65	°C	
Auto-ignition temperature		not determined		Reason for missing data:not determined
Decomposition temperature		not determined		Reason for missing data:not determined
pH		11		
Kinematic viscosity		not determined		Reason for missing data:not determined
Solubility		partially soluble in water		
Partition coefficient: n-octanol/water		not applicable		
Vapour pressure		not determined		Reason for missing data:not determined
Density and/or relative density		1,02		Method:EN ISO 1675 Temperature: 23 °C
Relative vapour density		not determined		Reason for missing data:not determined
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

VOC (Directive 2010/75/EU)	5,94 %	-	60,54	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.

1-METHOXY-2-PROPANOL

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

Dissolves various plastic materials.Stable in normal conditions of use and storage.
Absorbs and disolves in water and in organic solvents. With air it may slowly form explosive peroxides.

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.

1-METHOXY-2-PROPANOL
May react dangerously with: strong oxidising agents,strong acids.

10.4. Conditions to avoid

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

1-METHOXY-2-PROPANOL
Avoid exposure to: air.

10.5. Incompatible materials

1-METHOXY-2-PROPANOL
Incompatible with: oxidising substances,strong acids,alkaline metals.
N,N-dimethyl-1,3-diaminopropane
Incompatible with: copper,strong acids,oxidising agents,brass.
Amines, polyethylenepoly-, triethylenetetramine fraction
Incompatible with: acids,chlorinated hydrocarbons,oxidising agents,copper alloys,copper,nickel,cobalt.
Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine
Incompatible with: strong acids,strong bases,strong oxidising agents.
2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
Incompatible with: organic acids,mineral acids,sodium hypochlorite.
Amines, polyethylenepoly-, tetraethylenepentamine fraction
Incompatible with: acids,chlorinated hydrocarbons,oxidising agents,copper,cobalt,nickel,copper alloys.

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.

N,N-dimethyl-1,3-diaminopropane
In decomposition develops: nitrous gases,carbon dioxide,carbon monoxide.
Amines, polyethylenepoly-, triethylenetetramine fraction
May develop: nitrous gases.
2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
In decomposition develops: nitric acid,ammonia,nitrogen oxides (NOx),carbon dioxide.
Amines, polyethylenepoly-, tetraethylenepentamine fraction
May develop: nitrous gases.

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

Information not available

Information on likely routes of exposure

1-METHOXY-2-PROPANOL
WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; inhalation of ambient air; contact with the skin of products containing the substance.

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

SECTION 11. Toxicological information ... / >>

1-METHOXY-2-PROPANOL
The main route of entry is the skin, whereas the respiratory route is less important due to the low vapour pressure of the product. Above 100 ppm causes irritation of the eye, nose and oropharynx mucous membranes. At 1000 ppm, disturbance of equilibrium and severe eye irritation can be noticed. Clinical and biological examinations carried out on exposed volunteers revealed no anomalies. Acetate produces greater skin and eye irritation with direct contact. No chronic effects on humans have been reported.

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	>2000 mg/kg
ATE (Dermal) of the mixture:	Not classified (no significant component)

Corrosive to the respiratory tract.

Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine

LD50 (Dermal):	2000 mg/kg (rat)
LD50 (Oral):	2000 mg/kg (rat)

1-METHOXY-2-PROPANOL

LD50 (Dermal):	2000 mg/kg Rat
LD50 (Oral):	4016 mg/kg Rat

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL

LD50 (Dermal):	1 mL/kg (rat)
LD50 (Oral):	2169 mg/kg (rat)
ATE (Oral):	500 mg/kg estimate from table 3.1.2 of Annex I of the CLP (figure used for calculation of the acute toxicity estimate of the mixture)

N,N-dimethyl-1,3-diaminopropane

LD50 (Dermal):	> 1000 mg/kg
LD50 (Oral):	410 mg/kg

Amines, polyethylenepoly-, tetraethylenepentamine fraction

LD50 (Dermal):	1260 mg/kg (rabbit)
LD50 (Oral):	3221 mg/kg (rat)

Amines, polyethylenepoly-, triethylenetetramine fraction

LD50 (Dermal):	1465 mg/kg (rabbit)
LD50 (Oral):	1716 mg/kg (rat)

MALEIC ANHYDRIDE

LD50 (Dermal):	2620 mg/kg Rabbit
LD50 (Oral):	1090 mg/kg Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
Species: rabbit
Result: corrosive
Method: OECD 404

N,N-dimethyl-1,3-diaminopropane
Species: rabbit
Result: causes burns
Method: OECD 404

Amines, polyethylenepoly-, triethylenetetramine fraction
Species: rabbit
Result: corrosive
Method: OECD 404

SERIOUS EYE DAMAGE / IRRITATION

SECTION 11. Toxicological information ... / >>

Causes serious eye damage

Amines, polyethylenepoly-, triethylenetetramine fraction
Species: rabbit
Result: irreversible damage
Method: OECD 405

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

Amines, polyethylenepoly-, triethylenetetramine fraction
Species: Guinea pig
Result: sensitizing
Method: OECD 406

MALEIC ANHYDRIDE
Species: rabbit
Result: skin sensitization
Method: OECD 406

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

MALEIC ANHYDRIDE
Respiratory tract.
LOAEC: 0.01 mg/l
Species: rat
Method: Oecd 412
Source: Echa

Route of exposure

MALEIC ANHYDRIDE
Inhalation

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

SECTION 12. Ecological information ... / >>

12.1. Toxicity

Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine

LC50 - for Fish	> 0,15 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	1,2 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	0,15 mg/l/72h Raphidocelis subcapitata
EC10 for Algae / Aquatic Plants	0,022 mg/l/72h Raphidocelis subcapitata
Chronic NOEC for Fish	0,1 mg/l Pimephales promelas
Chronic NOEC for Crustacea	0,16 mg/l Daphnia magna

1-METHOXY-2-PROPANOL

LC50 - for Fish	> 1000 mg/l/96h
EC50 - for Crustacea	> 21100 mg/l/48h

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL

LC50 - for Fish	100 mg/l/96h
EC50 - for Crustacea	100 mg/l/48h
EC50 - for Algae / Aquatic Plants	> 25,5 mg/l/72h
EC10 for Algae / Aquatic Plants	> 1,13 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	> 1,13 mg/l

Amines, polyethylenepoly-, tetraethylenepentamine fraction

LC50 - for Fish	420 mg/l/96h
EC50 - for Crustacea	24,1 mg/l/48h
EC50 - for Algae / Aquatic Plants	> 2,1 mg/l/72h
EC10 for Crustacea	1,9 mg/L/504h
EC10 for Algae / Aquatic Plants	0,5 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	500 µg/L

Amines, polyethylenepoly-, triethylenetetramine fraction

LC50 - for Fish	330 mg/l/96h
EC50 - for Crustacea	31,1 mg/l/48h
EC50 - for Algae / Aquatic Plants	20 mg/l/72h
EC10 for Crustacea	1,9 mg/L/504h
EC10 for Algae / Aquatic Plants	1,34 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	2,5 mg/l

MALEIC ANHYDRIDE

LC50 - for Fish	75 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	42,81 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	74,35 mg/l/72h Pseudokirchneriella subcapitata
Chronic NOEC for Crustacea	10 mg/l Daphnia magna

12.2. Persistence and degradability

Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine

Solubility in water	40 g/l
NOT rapidly degradable	

1-METHOXY-2-PROPANOL

Solubility in water	1000 - 10000 mg/l
Rapidly degradable	

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL

Solubility in water	> 10000 mg/l
NOT rapidly degradable	

Amines, polyethylenepoly-, tetraethylenepentamine fraction

Solubility in water	1000 g/l
NOT rapidly degradable	

Amines, polyethylenepoly-, triethylenetetramine fraction

Solubility in water	1000 g/l
NOT rapidly degradable	

SECTION 12. Ecological information ... / >>

MALEIC ANHYDRIDE
Solubility in water > 10000 mg/l
Inherently degradable

12.3. Bioaccumulative potential

Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine
Partition coefficient: n-octanol/water 10,34
BCF 77,4

1-METHOXY-2-PROPANOL
Partition coefficient: n-octanol/water < 1

2,4,6-TRIS(DIMETHYLAMINOMETHYL) PHENOL
Partition coefficient: n-octanol/water -0,66

Amines, polyethylenepoly-, tetraethylenepentamine fraction
Partition coefficient: n-octanol/water -2,6

Amines, polyethylenepoly-, triethylenetetramine fraction
Partition coefficient: n-octanol/water -2,08

MALEIC ANHYDRIDE
Partition coefficient: n-octanol/water -2,78

12.4. Mobility in soil

Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine
Partition coefficient: soil/water 1000000

Amines, polyethylenepoly-, tetraethylenepentamine fraction
Partition coefficient: soil/water 3162,28

Amines, polyethylenepoly-, triethylenetetramine fraction
Partition coefficient: soil/water 3162,28

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.
The management of waste arising from the use or dispersal of this product must be organised in accordance with occupational safety regulations. See section 8 for possible need for PPE.
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: UN 3082

ADR / RID: In accordance with Special Provision 375, this product, when is packed in receptacles of a capacity ≤ 5Kg or 5L, is not submitted to ADR provisions.

IMDG: In accordance with Section 2.10.2.7 of IMDG Code, this product, when is packed in receptacles of a capacity ≤ 5Kg or 5L, is not submitted to IMDG Code provisions.

IATA: In accordance with SP A197, this product, when is packed in receptacles of a capacity ≤ 5Kg or 5L, is not submitted to IATA dangerous goods regulations.

14.2. UN proper shipping name

ADR / RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine; Formaldehyde, polymer with N1-(2-aminoethyl)-N2-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine, 2, 2'-[1,4-butanediylbis(oxymethyle)])

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine; Formaldehyde, polymer with N1-(2-aminoethyl)-N2-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine, 2, 2'-[1,4-butanediylbis(oxymethyle)])

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fatty acids, C18-unsatd, dimers, polymers with tall-oil fatty acids and triethylenetetramine; Formaldehyde, polymer with N1-(2-aminoethyl)-N2-[2-[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine, 2, 2'-[1,4-butanediylbis(oxymethyle)])

14.3. Transport hazard class(es)

ADR / RID: Class: 9 Label: 9

IMDG: Class: 9 Label: 9

IATA: Class: 9 Label: 9

14.4. Packing group

ADR / RID, IMDG, IATA: III

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous

IMDG: Marine Pollutant

IATA: Environmentally Hazardous

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 90	Limited Quantities: 5 lt	Tunnel restriction code: (-)
	Special provision: 274, 335, 375, 601, 650		
IMDG:	EMS: F-A, S-F	Limited Quantities: 5 lt	
IATA:	Cargo:	Maximum quantity: 450 L	Packaging instructions: 964
	Passengers:	Maximum quantity: 450 L	Packaging instructions: 964
	Special provision:	A97, A158, A197, A215	

SECTION 14. Transport information ... / >>

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: 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:
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.

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:

Flam. Liq. 3	Flammable liquid, category 3
Repr. 2	Reproductive toxicity, category 2
Acute Tox. 4	Acute toxicity, category 4
STOT RE 1	Specific target organ toxicity - repeated exposure, category 1
Skin Corr. 1B	Skin corrosion, category 1B
Skin Corr. 1C	Skin corrosion, category 1C
Eye Dam. 1	Serious eye damage, category 1
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Resp. Sens. 1	Respiratory sensitization, category 1
Skin Sens. 1	Skin sensitization, category 1
Skin Sens. 1A	Skin sensitization, category 1A
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
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H226	Flammable liquid and vapour.
H361d	Suspected of damaging the unborn child.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H372	Causes damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.

SECTION 16. Other information ... / >>

H318	Causes serious eye damage.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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.
H412	Harmful to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

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
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- 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
- vPvM: Very persistent and very mobile
- 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)
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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)

SECTION 16. Other information ... / >>

22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
23. Delegated Regulation (UE) 2023/707
24. Delegated Regulation (UE) 2023/1434 (XIX Atp. CLP)
25. Delegated Regulation (UE) 2023/1435 (XX Atp. CLP)
26. Delegated Regulation (UE) 2024/197 (XXI Atp. CLP)
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- 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 / 14 / 15 / 16.