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: **29H**
Product name **STONE LC EST (B)**

UFI : **0YK0-6077-J00A-8ARA**

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

Intended use **EPOXY PRIMER FOR DAMP SURFACES**

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 **+39 0438 437511**

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.
Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Acute toxicity, category 4	H302	Harmful if swallowed.
Skin corrosion, category 1	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Skin sensitization, category 1A	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 2	H411	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

SECTION 2. Hazards identification ... / >>

Hazard statements:

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

Precautionary statements:

P260	Do not breathe dust / fume / gas / mist / vapours / spray.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P280	Wear protective gloves/ protective clothing / eye protection / face protection.
P310	Immediately call a POISON CENTER / doctor.
P264	Wash thoroughly with water and soap after handling.

Contains:
Trimethylhexamethylenediame
M-PHENYLENEBIS (METHYLAMINE)
3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE
Formaldehyde, polymeric reaction products with 4-tert-butylphenol, m-phenylenebis(methylamine) and trimethylhexane-1,6-diamine
Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine
4,4'-isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with triethylenetetramine
BENZYL ALCOHOL
Amines, polyethylenepoly-, tetraethylenepentamine fraction
3,6,9,12-tetraazatetradecamethylenediamine
1-(2-AMINOETHYIL)PIPERAZINE
Amines, polyethylenepoly-, triethylenetetramine fraction

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 contains substances with endocrine disrupting properties in concentration ≥ 0,1%:
acido salicilico

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine		
INDEX	25 ≤ x < 35	**Skin Corr. 1C H314, Eye Dam. 1 H318, Skin Sens. 1A H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411**
EC 629-725-6		
CAS 1226892-45-0		
REACH Reg. 01-2119487006-38		
M-PHENYLENEBIS (METHYLAMINE)		
INDEX	20 ≤ x < 25	**Acute Tox. 4 H302, Acute Tox. 4 H332, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1B H317, Aquatic Chronic 3 H412, EUH071**
EC 216-032-5		**ATE Oral: 500 mg/kg, LC50 Inhalation mists/powders: 1,34 mg/l/4h**
CAS 1477-55-0		
REACH Reg. 01-2119480150-50		

SECTION 3. Composition/information on ingredients ... / >>

PHENOL, STYRENATED

INDEX		15 ≤ x < 20	**Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411**
EC	*262-975-0*		
CAS	*61788-44-1*		
REACH Reg.	*01-2119979575-18*		

Formaldehyde, polymeric reaction products with 4-tert-butylphenol, m-phenylenebis(methylamine) and trimethylhexane-1,6-diamine

INDEX		11 ≤ x < 15	**Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1A H317, Aquatic Chronic 3 H412**
EC			
CAS			
REACH Reg.	*esente*		

Trimethylhexamethylenediame

INDEX		5 ≤ x < 7	**Acute Tox. 4 H302, Skin Corr. 1A H314, Eye Dam. 1 H318, Skin Sens. 1A H317**
EC	*247-063-2*		**Skin Corr. 1B H314: ≥ 5% - < 50%, Skin Corr. 1C H314: ≥ 5% - < 50%, Skin Irrit. 2 H315: ≥ 1% - < 5%**
CAS	*25513-64-8*		**LD50 Oral: 910 mg/kg**
REACH Reg.	*01-2119560598-25*		

3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE

INDEX	*612-067-00-9*	5 ≤ x < 7	**Acute Tox. 4 H302, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1A H317**
EC	*220-666-8*		**Skin Sens. 1A H317: ≥ 0,001%**
CAS	*2855-13-2*		**LD50 Oral: 1030 mg/kg**
REACH Reg.	*01-2119514687-32*		

4,4'-isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with triethylenetetramine

INDEX		3 ≤ x < 5	**Acute Tox. 4 H302, Skin Corr. 1 H314, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1**
EC	*500-104-0*		**ATE Oral: 500 mg/kg**
CAS	*38294-69-8*		
REACH Reg.	*01-2120766646-41*		

BENZYL ALCOHOL

INDEX	*603-057-00-5*	1 ≤ x < 3	**Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Sens. 1B H317**
EC	*202-859-9*		**LD50 Oral: 1200 mg/kg**
CAS	*100-51-6*		
REACH Reg.	*01-2119492630-38*		

acido salicilico

INDEX	*607-732-00-5*	0,5 ≤ x < 1	**Repr. 2 H361d, Acute Tox. 4 H302, Eye Dam. 1 H318**
EC	*200-712-3*		**LD50 Oral: 891 mg/kg**
CAS	*69-72-7*		
REACH Reg.	*01-2119486984-17*		

Amines, polyethylenepoly-, triethylenetetramine fraction

INDEX		0,5 ≤ x < 1	**Acute Tox. 4 H302, Acute Tox. 4 H312, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Chronic 3 H412**
EC	*292-588-2*		**ATE Oral: 500 mg/kg, ATE Dermal: 1100 mg/kg**
CAS	*90640-67-8*		
REACH Reg.	*01-2119487919-13*		

1-(2-AMINOETHYIL)PIPERAZINE

INDEX	*612-105-00-4*	0,1 ≤ x < 0,5	**Repr. 2 H361fd, Acute Tox. 3 H311, Acute Tox. 4 H302, STOT RE 1 H372, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Chronic 3 H412**
EC	*205-411-0*		**ATE Oral: 500 mg/kg, LD50 Dermal: 866 mg/kg**
CAS	*140-31-8*		
REACH Reg.	*01-2119471486-30*		

3,6,9,12-tetraazatetradecamethylenediamine

INDEX	*612-064-00-2*	0,25 ≤ x < 0,5	**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	*223-775-9*		**LD50 Oral: 1600 mg/kg, ATE Dermal: 1100 mg/kg**
CAS	*4067-16-7*		

SECTION 3. Composition/information on ingredients ... / >>

Amines, polyethylenepoly-, tetraethylenepentamine 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 2 H411**
EC	*292-587-7*		**ATE Oral: 500 mg/kg, LD50 Dermal: 1260 mg/kg**
CAS	*90640-66-7*		
REACH Reg.	*01-2119487290-37*		

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.
INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Rinse your mouth with running water. 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.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

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

SECTION 7. Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory references:

CZE	Česká Republika	NAŘÍZENÍ VLÁDY ze dne 10. května 2021, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	Forschungsgemeinschaft MAK- und BAT-Werte-Liste 2022 Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe Mitteilung 58
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en FranceDécret n° 2021-1849 du 28 décembre 2021
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
RUS	Россия	ПОСТАНОВЛЕНИЕ от 13 февраля 2018 г. N 25 ОБ УТВЕРЖДЕНИИ ГИГИЕНИЧЕСКИХ НОРМАТИВОВ ГН 2.2.5.3532-18 "ПРЕДЕЛЬНО ДОПУСТИМЫЕ КОНЦЕНТРАЦИИ (ПДК) ВРЕДНЫХ ВЕЩЕСТВ В ВОЗДУХЕ РАБОЧЕЙ ЗОНЫ"
SVN	Slovenija	Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu (Uradni list RS, št. 100/01, 39/05, 53/07, 102/10, 43/11 – ZVZD-1, 38/15, 78/18 in 78/19)

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

TLV-ACGIH ACGIH 2023

M-PHENYLENEBIS (METHYLAMINE)

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLEP	FRA			0,1		
MV	SVN	0,1				
TLV-ACGIH				0,018 (C)		SKIN

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,094	mg/l
Normal value in marine water	0,009	mg/l
Normal value for fresh water sediment	12,4	mg/kg/d
Normal value for marine water sediment	1,24	mg/kg/d
Normal value for marine water, intermittent release	0,152	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	2,44	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
Oral		NPI		NPI				
Inhalation	NPI	NPI	NPI	NPI	MED	NPI	0,2 mg/m3	1,2 mg/m3
Skin	NPI	NPI	NPI	NPI	MED	NPI	MED	0,33 mg/kg bw/d

BENZYL ALCOHOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
TLV	CZE	40	8,88	80	17,76		
AGW	DEU	22	5	44	10	SKIN	11
MAK	DEU	22	5	44	10	SKIN	
NDS/NDSCh	POL	240					
ПДК	RUS			5			п
MV	SVN	22	5	44	10	SKIN	

Predicted no-effect concentration - PNEC

Normal value in fresh water	1	mg/l
Normal value in marine water	0,1	mg/l
Normal value for fresh water sediment	5,27	mg/kg
Normal value for marine water sediment	0,527	mg/kg
Normal value for water, intermittent release	2,3	mg/l
Normal value of STP microorganisms	39	mg/l
Normal value for the terrestrial compartment	0,45	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		20 mg/kg bw/d		4 mg/kg bw/d				
Inhalation		27 mg/m3		5,4 mg/m3		110 mg/m3		22 mg/m3
Skin		20 mg/kg bw/d		4 mg/kg bw/d		40 mg/kg bw/d		8 mg/kg bw/d

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

3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,06	mg/l
Normal value in marine water	0,006	mg/l
Normal value for fresh water sediment	5,784	mg/kg/d
Normal value for marine water sediment	0,578	mg/kg/d
Normal value for marine water, intermittent release	0,23	mg/l
Normal value of STP microorganisms	3,18	mg/l
Normal value for the terrestrial compartment	1,121	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
Oral			0,300 mg/kg bw/d	0,300 mg/kg bw/d				
Inhalation					0,073 mg/m3	0,073 mg/m3		

3,6,9,12-tetraazatetradecamethylenediamine

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		32 mg/kg/d		0,65 mg/kg/d				
Inhalation		2542 mg/m3		0,46 mg/m3		8550 mg/m3		1,59 mg/m3
Skin	1,59 mg/cm2	13 mg/kg/d	0,68 mg/cm2	0,4 mg/kg/d			0,044 mg/cm2	0,91 mg/kg bw/d

1-(2-AMINOETHYIL)PIPERAZINE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,058	mg/l
Normal value in marine water	0,0058	mg/l
Normal value for fresh water sediment	215	mg/kg/d
Normal value for marine water sediment	21,5	mg/kg/d
Normal value of STP microorganisms	250	mg/l
Normal value for the terrestrial compartment	1	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					0,08 mg/m3	10,6 mg/m3	0,015 mg/m3	10,6 mg/m3
Skin								3,33 mg/kg/d

Amines, polyethylenepoly-, triethylenetetramine fraction

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0268	mg/l
Normal value for fresh water sediment	8,572	mg/kg/d
Normal value for marine water sediment	0,8572	mg/kg/d
Normal value for marine water, intermittent release	0,2	mg/l
Normal value for fresh water, intermittent release	0,02	mg/l
Normal value of STP microorganisms	0,13	mg/l

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			VND	0,14 mg/kg bw/d				
Inhalation				0,096 mg/m3			VND	0,54 mg/m3

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

acido salicilico		
Predicted no-effect concentration - PNEC		
Normal value in fresh water	200	µg/L
Normal value in marine water	1	mg/l
Normal value for fresh water sediment	1,42	mg/kg
Normal value for marine water sediment	142	µg/kg
Normal value for marine water, intermittent release	20	µg/L
Normal value of STP microorganisms	162	mg/l
Normal value for the terrestrial compartment	166	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		4,0 mg/kg		1,0 mg/kg				
Inhalation		NPI	NPI	4,0 mg/m³	NPI	NPI	5,0 mg/m³	5,0 mg/m³
Skin		NPI	NPI	1,0 mg/kg	NPI	NPI	NPI	2,3 mg/kg

Amines, polyethylenepoly-, tetraethylenepentamine fraction		
Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,01	mg/l
Normal value in marine water	0,001	mg/l
Normal value for fresh water sediment	3,198	mg/kg/d
Normal value for marine water sediment	0,3198	mg/kg/d
Normal value for marine water, intermittent release	0,068	mg/l
Normal value for fresh water, intermittent release	0,0068	mg/l
Normal value of STP microorganisms	4,6	mg/l
Normal value for the terrestrial compartment	2,5	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
Oral		NPI		0,21 mg/kg bw/d				
Inhalation	HIGH		HIGH	0,14 mg/m3	HIGH		HIGH	0,82 mg/m3
Skin	HIGH	HIGH	0,0208 mg/cm2	NPI	HIGH	HIGH	0,25 mg/cm2	NPI

Trimethylhexamethylenediame		
Predicted no-effect concentration - PNEC		
Normal value in fresh water	102	µg/L
Normal value in marine water	315	µg/L
Normal value for fresh water sediment	622	µg/kg
Normal value for marine water sediment	62	µg/kg
Normal value for marine water, intermittent release	10,2	µg/L
Normal value of STP microorganisms	72	mg/l
Normal value for the terrestrial compartment	10	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		NEA		50,0 µg/kg				
Inhalation		NEA	NEA	NEA	HIGH	NPI	HIGH	NPI
Skin		NEA	NEA	NEA	HIGH	HIGH	HIGH	HIGH

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

Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine		
Predicted no-effect concentration - PNEC		
Normal value in fresh water	30,7	µg/L
Normal value in marine water	6,12	µg/L
Normal value for fresh water sediment	119,8	mg/kg
Normal value for marine water sediment	11,98	mg/kg
Normal value for marine water, intermittent release	3,07	µg/L
Normal value of STP microorganisms	2,3	mg/l
Normal value for the food chain (secondary poisoning)	20	mg/kg
Normal value for the terrestrial compartment	9,44	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		500,0 µg/kg				
Inhalation		NPI	NPI	1,74 mg/m³		LOW		9,87 mg/m³
Skin		NPI	NPI	500,0 µg/kg	HIGH	NPI	HIGH	1,4 mg/kg

PHENOL, STYRENATED		
Predicted no-effect concentration - PNEC		
Normal value in fresh water	4	µg/L
Normal value in marine water	46	µg/L
Normal value for fresh water sediment	248	µg/kg
Normal value for marine water sediment	24,8	µg/kg
Normal value for water, intermittent release	4,6	µg/L
Normal value for marine water, intermittent release	400	ng/L
Normal value of STP microorganisms	36,2	mg/l
Normal value for the terrestrial compartment	47,3	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		LOW		750,0 µg/kg				
Inhalation		LOW	LOW	1,31 mg/m³	LOW	LOW	LOW	7,4 mg/m³
Skin		LOW	LOW	750,0 µg/kg	LOW	LOW	LOW	2,1 mg/kg

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: PVC
In the case of mixtures, work glove resistance to chemical agents must be verified before use, as it is not predictable. Gloves have a wear time that depends on use type and duration.
Glove thickness must be selected based on the minimum required breakthrough time.
Breakthrough time: 480 min

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

Glove resistance depends on various elements, such as temperature and other environmental factors.
SKIN PROTECTION
Wear category III professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.
EYE PROTECTION
Wear a hood visor or protective visor combined with airtight goggles (see standard EN ISO 16321).
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
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		LIGHT YELLOW	
Odour		amino	
Melting point / freezing point		not determined	Reason for missing data:not determined
Initial boiling point		not determined	Reason for missing data:not determined
Flammability		not available	
Lower explosive limit		not determined	Reason for missing data:not determined
Upper explosive limit		not determined	Reason for missing data:not determined
Flash point	>	150 °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		slightly soluble	
Partition coefficient: n-octanol/water		not applicable	
Vapour pressure		not determined	Reason for missing data:not determined
Density and/or relative density		1,01 kg/l	
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)	1,35 %	-	13,63	g/litre
VOC (volatile carbon)	1,05 %	-	10,59	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.

BENZYL ALCOHOL

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

Decomposes at temperatures above 870°C/1598°F.Possibility of explosion.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

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

BENZYL ALCOHOL
May react dangerously with: hydrobromic acid,iron,oxidising agents,sulphuric acid.Risk of explosion on contact with: phosphorus trichloride.
3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE
May react dangerously with: strong oxidising agents,concentrated inorganic acids.

10.4. Conditions to avoid

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

BENZYL ALCOHOL
Avoid exposure to: air,sources of heat,naked flames.
3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE
Avoid contact with: strong acids,strong oxidants.

10.5. Incompatible materials

BENZYL ALCOHOL
Incompatible with: sulphuric acid,oxidising substances,aluminium.
Amines, polyethylenepoly-, tetraethylenepentamine fraction
Incompatible with: acids,chlorinated hydrocarbons,oxidising agents,copper,cobalt,nickel,copper alloys.

10.6. Hazardous decomposition products

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

Information not available

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

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation - mists / powders) of the mixture:	> 5 mg/l
ATE (Oral) of the mixture:	1298,90 mg/kg
ATE (Dermal) of the mixture:	>2000 mg/kg

Corrosive to the respiratory tract.

M-PHENYLENEBIS (METHYLAMINE)

LD50 (Dermal):	> 3100 mg/kg Rat
LD50 (Oral):	> 200 mg/kg Rat - Sprague-Dawley
ATE (Oral):	500 mg/kg estimate from table 3.1.2 of Annex I of the CLP

SECTION 11. Toxicological information ... / >>

(figure used for calculation of the acute toxicity estimate of the mixture)
LC50 (Inhalation mists/powders): 1,34 mg/l/4h Rat

BENZYL ALCOHOL
LD50 (Dermal): 2000 mg/kg Rabbit
LD50 (Oral): 1200 mg/kg
LC50 (Inhalation vapours): > 4,1 mg/l/4h Rat

3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE
LD50 (Oral): 1030 mg/kg

3,6,9,12-tetraazatetradecamethylenediamine
LD50 (Oral): 1600 mg/kg Rat

1-(2-AMINOETHYIL)PIPERAZINE
LD50 (Dermal): 866 mg/kg Rabbit
LD50 (Oral): 2140 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)

Amines, polyethylenepoly-, triethylenetetramine fraction
LD50 (Dermal): 550 mg/kg Rabbit
ATE (Dermal): 1100 mg/kg estimate from table 3.1.2 of Annex I of the CLP
(figure used for calculation of the acute toxicity estimate of the mixture)
LD50 (Oral): 2500 mg/kg Rat

acido salicilico
LD50 (Dermal): 2000 mg/kg (rat)
LD50 (Oral): 891 mg/kg (rat)

Amines, polyethylenepoly-, tetraethylenepentamine fraction
LD50 (Dermal): 1260 mg/kg Rabbit
LD50 (Oral): 3221 mg/kg Rat

4,4'-isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with triethylenetetramine
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)

Trimethylhexamethylenediame
LD50 (Oral): 910 mg/kg (rat)

Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine
LD50 (Oral): 2500 mg/kg (rat)

PHENOL, STYRENATED
LD50 (Dermal): 2000 mg/kg (rat)
LD50 (Oral): 2000 mg/kg (rat)

SKIN CORROSION / IRRITATION

Corrosive for the skin

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

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

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

RESPIRATORY OR SKIN SENSITISATION

SECTION 11. Toxicological information ... / >>

Sensitising for the skin

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

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 contains the following endocrine disruptors in concentrations of 0.1% or greater by weight that may have endocrine disrupting effects on humans and cause adverse effects on the exposed individual or his or her progeny:
acido salicilico

SECTION 12. Ecological information

This product is dangerous for the environment and highly toxic for aquatic organisms.
This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it has negative effects on the aquatic environment.

12.1. Toxicity

M-PHENYLENEBIS (METHYLAMINE)

LC50 - for Fish	87,6 mg/l/96h Oryzias latipes
EC50 - for Crustacea	15,2 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	20,3 mg/l/72h Pseudokirchnerella subcapitata

BENZYL ALCOHOL

LC50 - for Fish	10 mg/l/96h Bluegill

3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE

LC50 - for Fish	110 mg/l/96h Fish
EC50 - for Crustacea	23 mg/l/48h Daphnia

3,6,9,12-tetraazatetradecamethylenediamine

LC50 - for Fish	133 mg/l/96h Pimephales promelas
EC50 - for Crustacea	18 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	0,7 mg/l/72h Pseudokirchneriella subcapitata

1-(2-AMINOETHYIL)PIPERAZINE

LC50 - for Fish	2190 mg/l/96h Fish
EC50 - for Crustacea	58 mg/l/48h Daphnia
EC50 - for Algae / Aquatic Plants	> 1000 mg/l/72h

SECTION 12. Ecological information ... / >>

Amines, polyethylenepoly-, triethylenetetramine fraction

LC50 - for Fish	330 mg/l/96h Fish
EC50 - for Crustacea	31 mg/l/48h Daphnia
EC10 for Algae / Aquatic Plants	1,34 mg/l/72h

acido salicilico

LC50 - for Fish	1,853 g/L/24h
EC50 - for Crustacea	870 mg/l/48h
EC50 - for Algae / Aquatic Plants	100 mg/l/72h
Chronic NOEC for Crustacea	10 mg/l

Amines, polyethylenepoly-, tetraethylenepentamine fraction

LC50 - for Fish	420 mg/l/96h Fish
EC50 - for Crustacea	24,1 mg/l/48h Daphnia
EC50 - for Algae / Aquatic Plants	6,8 mg/l/72h
EC10 for Algae / Aquatic Plants	0,5 mg/l/72h

Trimethylhexamethylenediame

LC50 - for Fish	174 mg/l/48h
EC50 - for Algae / Aquatic Plants	43,5 mg/l/72h
EC10 for Crustacea	1,02 mg/L/504h
Chronic NOEC for Fish	10,9 mg/L/720h
Chronic NOEC for Crustacea	1,02 mg/l
Chronic NOEC for Algae / Aquatic Plants	16 mg/l

Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine

LC50 - for Fish	310 µg/L/24h
EC50 - for Crustacea	240 µg/L/48h
EC50 - for Algae / Aquatic Plants	638 µg/L/72h
EC10 for Algae / Aquatic Plants	395 µg/L/72h

PHENOL, STYRENATED

LC50 - for Fish	5,6 mg/l/96h
EC50 - for Crustacea	4,6 mg/l/48h
EC50 - for Algae / Aquatic Plants	1,35 mg/l/72h
Chronic NOEC for Fish	> 187,9 µg/L/840h
Chronic NOEC for Crustacea	200 µg/L

12.2. Persistence and degradability

M-PHENYLENEBIS (METHYLAMINE)
Solubility in water 1000 - 10000 mg/l
Rapidly degradable

BENZYL ALCOHOL
Rapidly degradable

3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE
Solubility in water 1000 - 10000 mg/l
NOT rapidly degradable

3,6,9,12-tetraazatetradecamethylenediamine
NOT rapidly degradable

1-(2-AMINOETHYIL)PIPERAZINE
NOT rapidly degradable

Amines, polyethylenepoly-, triethylenetetramine fraction
NOT rapidly degradable

acido salicilico
Solubility in water 2,55 g/l
Rapidly degradable

Amines, polyethylenepoly-, tetraethylenepentamine fraction
NOT rapidly degradable

SECTION 12. Ecological information ... / >>

Trimethylhexamethylenediame
Solubility in water 1 g/l
NOT rapidly degradable

Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine
Solubility in water 19 g/l
Entirely degradable

PHENOL, STYRENATED
Solubility in water 1,95 g/l
NOT rapidly degradable

12.3. Bioaccumulative potential

M-PHENYLENEBIS (METHYLAMINE)
Partition coefficient: n-octanol/water 0,18

BENZYL ALCOHOL
Partition coefficient: n-octanol/water 1,1

3,6,9,12-tetraazatetradecamethylenediamine
BCF < 100

acido salicilico
Partition coefficient: n-octanol/water 2,64

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

Trimethylhexamethylenediame
Partition coefficient: n-octanol/water -0,3

Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine
Partition coefficient: n-octanol/water 2,2

PHENOL, STYRENATED
Partition coefficient: n-octanol/water 3,03
BCF 10395

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ 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 2735

14.2. UN proper shipping name

ADR / RID: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.
IMDG: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.
IATA: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.

14.3. Transport hazard class(es)

ADR / RID: Class: 8 Label: 8

IMDG: Class: 8 Label: 8

IATA: Class: 8 Label: 8

14.4. Packing group

ADR / RID, IMDG, IATA: II

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: 80 Special provision: 274	Limited Quantities: 1 L	Tunnel restriction code: (E)
IMDG:	EMS: F-A, S-B	Limited Quantities: 1 L	
IATA:	Cargo:	Maximum quantity: 30 L	Packaging instructions: 855
	Passengers:	Maximum quantity: 1 L	Packaging instructions: 851
	Special provision:	A3, A803	

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

SECTION 15. Regulatory information ... / >>

Point 3
Contained substance
Point 75

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors
not applicable

Substances in Candidate List (Art. 59 REACH)
On the basis of available data, the product does not contain any SVHC in percentage ≥ 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 been performed for the following contained substances
M-PHENYLENEBIS (METHYLAMINE)
BENZYL ALCOHOL
3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE
1-(2-AMINOETHYIL)PIPERAZINE

SECTION 16. Other information

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

Repr. 2	Reproductive 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
Skin Corr. 1A	Skin corrosion, category 1A
Skin Corr. 1B	Skin corrosion, category 1B
Skin Corr. 1C	Skin corrosion, category 1C
Skin Corr. 1	Skin corrosion, category 1
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
Skin Sens. 1A	Skin sensitization, category 1A
Skin Sens. 1B	Skin sensitization, category 1B
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
H361d	Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H311	Toxic in contact with skin.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

SECTION 16. Other information ... / >>

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)
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)
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)

- The Merck Index. - 10th Edition
- Handling Chemical Safety

SECTION 16. Other information ... / >>

- 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 / 04 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16.