

## Safety Data Sheet

### EPORIP comp.A

Safety Data Sheet dated: 30/05/2019 - version 1



## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Mixture identification:

Trade name: EPORIP comp.A

Trade code: 901521

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

Recommended use: Epoxy adhesive

Uses advised against: Data not available

### 1.3. Details of the supplier of the safety data sheet

Company: MAPEI U.K. Ltd - Mapei House Steel Park Road

Halesowen - West Midlands B62 8HD

www.mapei.co.uk (office hour 8:30-17:30)

Responsible: sicurezza@mapei.it

### 1.4. Emergency telephone number

call NHS 111 or a doctor/OHES Environmental Ltd +44(0)1684 299 886

phone: +44(0)121 508 6970 - fax: +44(0)121 5086 960

## SECTION 2: Hazards identification



### 2.1. Classification of the substance or mixture

#### Regulation (EC) n. 1272/2008 (CLP)

Skin Irrit. 2 Causes skin irritation.

Eye Irrit. 2 Causes serious eye irritation.

Skin Sens. 1A May cause an allergic skin reaction.

Aquatic Chronic 2 Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

### 2.2. Label elements

#### Regulation (EC) n. 1272/2008 (CLP)

#### Pictograms and Signal Words



Warning

#### Hazard statements:

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

#### Precautionary statements:

P261 Avoid breathing mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P391 Collect spillage.

#### Special Provisions:

EUH205 Contains epoxy constituents. May produce an allergic reaction.

#### Contains:

bisphenol F - epoxy resin

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) May produce an allergic reaction.

1,6-Hexanediol Diglycidyl Ether May produce an allergic reaction.

**Special provisions according to Annex XVII of REACH and subsequent amendments:**

None

**2.3. Other hazards**

No PBT/vPvB Ingredients are present

Other Hazards: No other hazards

This preparation contains low molecular weight epoxy resins. Cross sensitisation to other epoxies is possible. Avoid also exposure to spray mist and vapour.

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**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

N.A.

**3.2. Mixtures**

Mixture identification: EPORIP comp.A

**Hazardous components within the meaning of the CLP regulation and related classification:**

Quantity	Name	Ident. Numb.	Classification	Registration Number
≥25 - <50 %	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	CAS:25068-38-6 EC:500-033-5 Index:603-074-00-8	Eye Irrit. 2, H319; Skin Irrit. 2, H315; Skin Sens. 1,1A,1B, H317; Aquatic Chronic 2, H411	01-2119456619-26-xxxx
≥10 - <20 %	1,6-Hexanediol Diglycidyl Ether	CAS:933999-84-9 EC:618-939-5	Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 3, H412	01-2119463471-41-0005
≥5 - <10 %	bisphenol F - epoxy resin	CAS:9003-36-5 EC:500-006-8	Skin Irrit. 2, H315; Skin Sens. 1A, H317; Aquatic Chronic 2, H411	01-2119454392-40-XXXX
≥0.25 - <0.49 %	2-butoxyethanol; ethylene glycol monobutyl ether	CAS:111-76-2 EC:203-905-0	Eye Irrit. 2, H319; Skin Irrit. 2, H315; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	01-2119475108-36

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**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose of safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and the hazard label.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

Eye irritation

Eye damages

Skin Irritation

Erythema

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

(see paragraph 4.1)

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media:

- Water.
- Carbon dioxide (CO<sub>2</sub>).

Extinguishing media which must not be used for safety reasons:

None in particular.

### 5.2. Special hazards arising from the substance or mixture

- Do not inhale explosion and combustion gases.
- Burning produces heavy smoke.

### 5.3. Advice for firefighters

Use suitable breathing apparatus.

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## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- Wear personal protection equipment.
- Remove persons to safety.

### 6.2. Environmental precautions

- Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
- Limit leakages with earth or sand.

### 6.3. Methods and material for containment and cleaning up

- Suitable material for taking up: absorbing material, organic, sand
- Retain contaminated washing water and dispose it.

### 6.4. Reference to other sections

See also section 8 and 13

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Avoid contact with skin and eyes, inhalation of vapours and mists.
- Don't use empty container before they have been cleaned.
- Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
- Contaminated clothing should be changed before entering eating areas.
- Do not eat or drink while working.
- See also section 8 for recommended protective equipment.

### 7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

### 7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### List of components with OEL value

Component	OEL Type	Country	Ceiling	Long Term mg/m <sup>3</sup>	Long Term ppm	Short Term mg/m <sup>3</sup>	Short Term ppm	Behaviour	Note
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	National	BULGARIA		1,0					
2-butoxyethanol; ethylene glycol monobutyl ether	SUVA	NNN		49	10	98	20		

NDS	NNN		98				
National	SWEDEN		50	10	100	20	SWEDEN, Short-term value, 15 minutes average value
National	FINLAND		98	20	250	50	FINLAND, hud
National	NORWAY		50	10			NORWAY, H
NDSCh	NNN		200				
EU	NNN		98	20	246	50	Skin
National	NORWAY		98	20	196	40	
ACGIH	NNN			20			A3, BEI - Eye and URT irr
DFG	GERMANY	C			98	20	
ACGIH				20			A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans; eye and upper respiratory tract irritation
National	SWEDEN		50	10			
National	FRANCE		49	10	246	50	
National	SPAIN		98	20	245	50	
National	GREECE		120	25			
National	DENMARK		98	20			
National	FINLAND		98	20	250	50	
National	GERMANY		49	10			
National	PORTUGAL		98	20	246	50	
National	NORWAY		50	10	75	15	
National	BELGIUM		98	20	246	50	
NDS	POLAND		98				
NDSCh	POLAND				200		
CHE	SWITZERLAND				98	20	
NDS	NETHERLANDS		100		246		
National	CZECHIA		100				
National	HUNGARY		98		246		
Malaysian OEL	MALAYSIA		96,7	20			Skin notation
National	ESTONIA		98	20	246	50	
National	LATVIA		98	20	246	50	
National	CZECHIA	C			200		
National	SLOVAKIA	C			246		
National	SLOVAKIA		98	20			
National	SLOVENIA		98	20	245	50	
National	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND		123	25	246	50	
National	BULGARIA		98	20	246	50	
National	ROMANIA		98	20	246	50	
TUR	TURKEY		98	20	246	50	
National	LITHUANIA		50	10	100	20	
National	CROATIA		98	20	246	50	

**Biological Exposure Index**

CAS-No.	Component	Value	UoM	Medium	Biological Indicator	Sampling Period
111-76-2	2-butoxyethanol; ethylene glycol monobutyl ether	200	MGGCREAT	Urine	Butoxyacetic acid ( BAA )	End of turn

**Predicted No Effect Concentration (PNEC) values**

Component	CAS-No.	PNEC LIMIT	Exposure Route	Exposure Frequency	Remark
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight <= 700)	25068-38-6	0,006	Fresh Water		
		0,0006	Marine water		
		0,0627	Freshwater sediments		
		0,00627	Marine water sediments		
		0,0115	Fresh Water		
		0,283	Freshwater sediments		
1,6-Hexanediol Diglycidyl Ether	933999-84-9	1	mg/l	Microorganisms in sewage treatments	
		0,0115	Fresh Water		
		0,283	Freshwater sediments		
		0,00115	Marine water		
		0,0283	Marine water sediments		
		0,223	Soil		
bisphenol F - epoxy resin	9003-36-5	10	mg/l	Microorganisms in sewage treatments	
		0,003	Fresh Water		
		0,294	Freshwater sediments		
		0,0003	Marine water		
		0,0294	Marine water sediments		
		0,237	Soil		

**Derived No Effect Level. (DNEL)**

Component	CAS-No.	Worker Industrial	Worker Professional	Consumer	Exposure Route	Exposure Frequency	Remark
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight <= 700)	25068-38-6	8,3			Human Dermal	Short Term, systemic effects	

		12,25 mg/m3		Human Inhalation	Short Term, systemic effects
		8,3 mg/kg		Human Dermal	Long Term, systemic effects
		12,25 mg/m3		Human Inhalation	Long Term, systemic effects
			3,571 mg/kg	Human Dermal	Short Term, systemic effects
			0,75 mg/kg	Human Oral	Short Term, systemic effects
			3,571 mg/kg	Human Dermal	Long Term, systemic effects
			0,75 mg/kg	Human Oral	Long Term, systemic effects
1,6-Hexanediol Diglycidyl Ether	933999-84- 9	2,8 mg/kg		Human Dermal	Long Term, systemic effects
		4,9 mg/m3		Human Inhalation	Long Term, systemic effects
2-butoxyethanol; ethylene glycol monobutyl ether	111-76-2	135 ppm	426 mg/m3	Human Inhalation	Short Term, systemic effects
		89 mg/kg	44,5 mg/kg	Human Dermal	Short Term, systemic effects
			13,4 mg/kg	Human Oral	Short Term, systemic effects
		50 ppm	123 mg/m3	Human Inhalation	Short Term, local effects
		75 mg/kg	38 mg/kg	Human Dermal	Long Term, systemic effects
		20 ppm	49 mg/m3	Human Inhalation	Long Term, systemic effects
			3,2 mg/kg	Human Oral	Long Term, systemic effects

## 8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Suitable materials for safety gloves; EN 374:

Polychloroprene - CR: thickness  $\geq 0,5$ mm; breakthrough time  $\geq 480$ min.

Nitrile rubber - NBR: thickness  $\geq 0,35$ mm; breakthrough time  $\geq 480$ min.

Butyl rubber - IIR: thickness  $\geq 0,5$ mm; breakthrough time  $\geq 480$ min.

Fluorinated rubber - FKM: thickness  $\geq 0,4$ mm; breakthrough time  $\geq 480$ min.

Neoprene gloves are suggested (0,5 mm) not recommended gloves: not waterproof gloves

Respiratory protection:

Personal Protective Equipment should comply with relevant CE standards (as EN 374 for gloves and EN 166 for goggles), correctly maintained and stored. Consult the supplier to check the suitability of equipment against specific chemicals and for user information.

In case of insufficient ventilation use mask with ABEKP filters (EN 14387).

Hygienic and Technical measures

N.A.

Appropriate engineering controls:

N.A.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state: Liquid  
Appearance and colour: liquid grey  
Odour: characteristic  
Odour threshold: N.A.  
pH: N.A.  
Melting point / freezing point: N.A.  
Initial boiling point and boiling range: N.A.  
Flash point: N.A.  
Evaporation rate: N.A.  
Upper/lower flammability or explosive limits: N.A.  
Vapour density: N.A.  
Vapour pressure: 0.01  
Relative density: 1.60 g/cm<sup>3</sup>  
Solubility in water: Insoluble  
Partition coefficient (n-octanol/water): N.A. - This product is a mixture  
Auto-ignition temperature: N.A. - No explosive or spontaneous ignition in contact with air at room temperature  
Decomposition temperature: N.A.  
Viscosity: 20,000.00 cPs  
Explosive properties: == - No components with explosive properties  
Oxidizing properties: N.A. - No component with oxidizing properties  
Solid/gas flammability: N.A.

## 9.2. Other information

No additional information

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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions

### 10.2. Chemical stability

Stable under normal conditions

### 10.3. Possibility of hazardous reactions

None.

### 10.4. Conditions to avoid

Stable under normal conditions.

### 10.5. Incompatible materials

None in particular.

### 10.6. Hazardous decomposition products

None.

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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Toxicological information of the mixture:

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

#### Toxicological information on main components of the mixture:

reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight <= 700)	a) acute toxicity	LD50 Oral Rat > 15000 mg/kg
		LD50 Skin Rabbit > 23000 mg/kg
		LD50 Oral Rat = 11400 mg/kg
	i) STOT-repeated exposure	NOAEL Oral Rat = 50 mg/kg
		NOAEL Skin Rat = 100 mg/kg
1,6-Hexanediol Diglycidyl Ether	a) acute toxicity	LD50 Oral Rat = 2190 mg/kg
		LD50 Skin Rabbit > 4900 mg/kg

i) STOT-repeated exposure NOAEL Oral = 200 mg/kg  
NOAEL Inhalation = 16 mg/m<sup>3</sup>

bisphenol F - epoxy resin a) acute toxicity LD50 Oral Rat > 10000 mg/kg  
LD50 Skin Rat > 2000 mg/kg  
LD50 Oral Rat > 2 g/kg  
i) STOT-repeated exposure NOAEL Oral = 250 mg/kg

2-butoxyethanol;  
ethylene glycol monobutyl ether a) acute toxicity LC50 Inhalation Rat = 2,2 mg/l 4h  
LD50 Oral Rat = 615 mg/kg  
LD50 Skin Rabbit = 405 mg/kg  
LD50 Skin Rabbit = 99 mg/kg  
LC50 Inhalation Rat = 450 ppm 4h  
LC50 Inhalation Rat = 486 ppm 4h  
LD50 Oral Rat = 470 mg/kg

**If not differently specified, the information required in Regulation (EU)2015/830 listed below must be considered as N.A.**

- a) acute toxicity
- b) skin corrosion/irritation
- c) serious eye damage/irritation
- d) respiratory or skin sensitisation
- e) germ cell mutagenicity
- f) carcinogenicity
- g) reproductive toxicity
- h) STOT-single exposure
- i) STOT-repeated exposure
- j) aspiration hazard

## SECTION 12: Ecological information

### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### List of components with eco-toxicological properties

Quantity	Component	Ident. Numb.	Ecotox Infos
>=25 - <50 %	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	CAS: 25068-38-6 - EINECS: 500-033-5 - INDEX: 603-074-00-8	a) Aquatic acute toxicity : LC50 Fish > 2 mg/L 96  a) Aquatic acute toxicity : EC50 Daphnia > 1,8 mg/L 48 a) Aquatic acute toxicity : LC50 Algae > 11 mg/L 72 a) Aquatic acute toxicity : LC50 Daphnia = 1,3 mg/L 96 b) Aquatic chronic toxicity : NOEC Daphnia = 0,3 mg/L
>=10 - <20 %	1,6-Hexanediol Diglycidyl Ether	CAS: 933999-84-9 - EINECS: 618-939-5	a) Aquatic acute toxicity : EC50 Daphnia = 47 mg/L 48  a) Aquatic acute toxicity : LC50 Fish = 30 mg/L 96 a) Aquatic acute toxicity : EC50 Algae = 23,1 mg/L 48
>=5 - <10 %	bisphenol F - epoxy resin	CAS: 9003-36-5 - EINECS: 500-	a) Aquatic acute toxicity : EC50 Fish = 2,54 mg/L 96



≥0.25 - <0.49 %	2-butoxyethanol; monobutyl ether	ethylene glycol	CAS: 111-76-2 - EINECS: 203- 905-0	a) Aquatic acute toxicity : EC50 Daphnia = 2,55 mg/L 48
				a) Aquatic acute toxicity : EC50 Daphnia > 100 mg/L 48
				a) Aquatic acute toxicity : LC50 Fish > 100 mg/L 96
				a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus = 1490 mg/L 96h EPA
				a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus = 2950 mg/L 96h IUCLID
				a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna > 1000 mg/L 48h EPA

**12.2. Persistence and degradability**

N.A.

**12.3. Bioaccumulative potential**

N.A.

**12.4. Mobility in soil**

N.A.

**12.5. Results of PBT and vPvB assessment**

No PBT/vPvB Ingredients are present

**12.6. Other adverse effects**

N.A.

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

Recover if possible. In so doing, comply with the local and national regulations currently in force.

**SECTION 14: Transport information****14.1. UN number**

3082

**14.2. UN proper shipping name**

ADR-Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resins)

IATA-Technical name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resins)

IMDG-Technical name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resins)

**14.3. Transport hazard class(es)**

ADR-Class: 9

IATA-Class: 9

IMDG-Class: 9

**14.4. Packing group**

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

**14.5. Environmental hazards**

Marine pollutant: Yes

Environmental Pollutant: Yes

**14.6. Special precautions for user**

Road and Rail (ADR-RID):

ADR exempt: No

ADR-Label: 9

ADR-Hazard identification number: NA

ADR-Special Provisions: 274 335 375 601

ADR-Transport category (Tunnel restriction code): 3 (-)

Air (IATA):

IATA-Passenger Aircraft: 964

IATA-Cargo Aircraft: 964

IATA-Label: 9  
IATA-Subrisk: -  
IATA-Erg: 9L  
IATA-Special Provisions: A97 A158 A197

Sea (IMDG):

IMDG-Stowage Code: Category A  
IMDG-Stowage Note: -  
IMDG-Subrisk: -  
IMDG-Special Provisions: 274 335 969  
IMDG-Page: N/A  
IMDG-Label: N/A  
IMDG-EMS: F-A, S-F  
IMDG-MFAG: N/A

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

N.A.

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**SECTION 15: Regulatory information**

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

VOC (2004/42/EC) : N.A. g/l

Dir. 98/24/EC (Risks related to chemical agents at work)  
Dir. 2000/39/EC (Occupational exposure limit values)  
Regulation (EC) n. 1907/2006 (REACH)  
Regulation (EU)2015/830  
Regulation (EC) n. 1272/2008 (CLP)  
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013  
Regulation (EU) n. 286/2011 (ATP 2 CLP)  
Regulation (EU) n. 618/2012 (ATP 3 CLP)  
Regulation (EU) n. 487/2013 (ATP 4 CLP)  
Regulation (EU) n. 944/2013 (ATP 5 CLP)  
Regulation (EU) n. 605/2014 (ATP 6 CLP)  
Regulation (EU) n. 2015/1221 (ATP 7 CLP)  
Regulation (EU) n. 2016/918 (ATP 8 CLP)  
Regulation (EU) n. 2016/1179 (ATP 9 CLP)  
Regulation (EU) n. 2017/776 (ATP 10 CLP)  
Provisions related to directive EU 2012/18 (Seveso III):

<b>Seveso III category according to Annex 1, part 1</b>	<b>Lower-tier threshold (tonnes)</b>	<b>Upper-tier threshold (tonnes)</b>
Products belongs to category E2	200	500

**German Water Hazard Class.**

N.A.

**Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:**

Restrictions related to the product: 3, 40  
Restrictions related to the substances contained: 46, 46A

**SVHC Substances:**

No Data Available

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for the mixture.

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**SECTION 16: Other information**

<b>Code</b>	<b>Description</b>
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

H332	Harmful if inhaled.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1-1A-1B	Skin Sens. 1,1A,1B	Skin Sensitisation, Category 1,1A,1B
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2
4.1/C3	Aquatic Chronic 3	Chronic (long term) aquatic hazard, category 3

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:**

**Classification according to Regulation (EC) Nr. 1272/2008      Classification procedure**

3.2/2	Calculation method
3.3/2	Calculation method
3.4.2/1A	Calculation method
4.1/C2	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This SDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

VOC: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.  
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).  
IC50: half maximal inhibitory concentration  
ICAO: International Civil Aviation Organization.  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).  
IMDG: International Maritime Code for Dangerous Goods.  
INCI: International Nomenclature of Cosmetic Ingredients.  
IRCCS: Scientific Institute for Research, Hospitalization and Health Care  
KSt: Explosion coefficient.  
LC50: Lethal concentration, for 50 percent of test population.  
LD50: Lethal dose, for 50 percent of test population.  
LDLo: Leathal Dose Low  
N.A.: Not Applicable  
NA: Not available  
NIOSH: National Institute for Occupational Safety and Health  
NOAEL: No Observed Adverse Effect Level  
OSHA: Occupational Safety and Health Administration.  
PBT: Persistent, Bioaccumulative and Toxic  
PGK: Packaging Instruction  
PNEC: Predicted No Effect Concentration.  
PSG: Passengers  
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.  
STEL: Short Term Exposure limit.  
STOT: Specific Target Organ Toxicity.  
TLV: Threshold Limiting Value.  
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).  
vPvB: Very Persistent, Very Bioaccumulative.  
WGK: German Water Hazard Class.