

Safety Data Sheet
MAPEFLEX PU 45 FT

Safety Data Sheet dated: 18/03/2020 - version 3



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

1.1. Product identifier

Mixture identification:

Trade name: MAPEFLEX PU 45 FT

Trade code: 906PG011152

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

Recommended use: Polyurethane-based adhesive

Uses advised against: Data not available

1.3. Details of the supplier of the safety data sheet

Company: MAPEI S.p.A. - Via Cafiero, 22 - 20158 Milano

Tel: +39-02-376731

Fax: +39-02-37673.214

Responsible: sicurezza@mapei.it

1.4. Emergency telephone number

Poison Centre - Ospedale di Niguarda - Milan - Tel. +39/02/66101029

MAPEI S.p.A. - Tel. +(39)02376731 - (office hours)

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

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

Resp. Sens. 1 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Pictograms and Signal Words



Danger

Hazard statements:

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements:

P261 Avoid breathing mist/vapours/spray.

P284 [In case of inadequate ventilation] wear respiratory protection.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER.

P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

EUH208 Contains 4-isocyanatesulphonyltoluene;-tosyl isocyanate. May produce an allergic reaction.

EUH204 Contains isocyanates. May produce an allergic reaction.

Contains:

diphenylmethanediisocyanate isomers and homologues

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

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: MAPEFLEX PU 45 FT

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

Quantity	Name	Ident. Numb.	Classification	Registration Number
≥1 - <2.5 %	N,N-dibenzyliden polyoxypropylene diamine	CAS:136855-71-5	Skin Irrit. 2, H315	
≥0.49 - <1 %	4-isocyanatesulphonyltoluene;-tosyl isocyanate	CAS:4083-64-1 EC:223-810-8 Index:615-012-00-7	Eye Irrit. 2, H319; STOT SE 3, H335; Skin Irrit. 2, H315; Resp. Sens. 1,1A,1B, H334, EUH014	01-2119980050-47-XXXX
≥0.25 - <0.49 %	diphenylmethanediisocyanate isomers and homologues	CAS:9016-87-9 EC:618-498-9 Index:615-005-00-9	Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H335; Skin Irrit. 2, H315; Resp. Sens. 1,1A,1B, H334; Skin Sens. 1,1A,1B, H317; STOT RE 2, H373; Carc. 2, H351	
≥0.01 - <0.016 %	2-methoxy-1-methylethyl acetate	CAS:108-65-6 EC:203-603-9 Index:607-195-00-7	Flam. Liq. 3, H226	01-2119475791-29-xxxx
≥0.005 - <0.01 %	phosphoric acid ... %, orthophosphoric acid ... %	CAS:7664-38-2 EC:231-633-2 Index:015-011-00-6	Met. Corr. 1, H290; Skin Corr. 1B, H314	01-2119485924-24-XXXX
<0.0015 %	chlorobenzene	CAS:108-90-7 EC:203-628-5 Index:602-033-00-1	Flam. Liq. 3, H226; Acute Tox. 4, H332; Skin Irrit. 2, H315; Aquatic Chronic 2, H411	01-2119432722-45-XXXX

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.

In case of eyes contact:

Wash immediately with water.

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

N.A.

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)

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO2).

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.

5.3. Advice for firefighters

Use suitable breathing apparatus.

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

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

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 ³	Long Term ppm	Short Term mg/m ³	Short Term ppm	Behaviour	Note
4-isocyanatesulphonyltoluene;-tosyl isocyanate	SUVA	NNN		0,020		0,020			
diphenylmethanediisocyanate isomers and homologues	ACGIH	NNN			0,05				
	SUVA	NNN		0,02		0,02			
	DFG	GERMANY	C			0,05			
	National	GERMANY		0,05					
	National	SLOVENIA		0,05		0,05			
2-methoxy-1-methylethyl acetate	ACGIH	NNN		275	50	550	100		Skin
	SUVA	NNN		275	50				
	National	SWEDEN		250	50	400	75		SWEDEN, 5 minutes av

	National FINLAND	270	50	550	100			FINLAND, I
	National NORWAY	270	50					NORWAY, I
	NDS NNN	260						
	NDSCh NNN	520						
	EU NNN	275	50	550	100			Skin
	National NORWAY	275	50	550	100			
	DFG GERMANY C			270	50			
	National SWEDEN	275	50					
	National FRANCE	275	50	550	100			
	National SPAIN	275	50	550	100			
	National GREECE	275	50	550	100			
	National DENMARK	275	50					
	National FINLAND	270	50	550	100			
	National GERMANY	270	50					
	National PORTUGAL	275	50	550	100			
	National NORWAY	270	50	337,5	75			
	National BELGIUM	275	50	550	100			
	NDS POLAND	260						
	NDSCh POLAND			520				
	CHE SWITZERLAND			275	50			
	NDS NETHERLANDS	550						
	National CZECH REPUBLIC	270						
	National HUNGARY	275		550				
	National ESTONIA	275	50	550	100			
	National LATVIA	275	50	550	100			
	National CZECH REPUBLIC C			550				
	National SLOVAKIA C			550				
	National SLOVAKIA	275	50					
	National SLOVENIA	275	50	550	100			
	National UNITED KINGDOM	274	50	548	100			
	National BULGARIA	275,0	50	550,0	100			
	National ROMANIA	275	50	550	100			
	TUR TURKEY	275	50	550	100			
	National LITHUANIA	250	50	400	75			
	National CROATIA	275	50	550	100			
	EU	275	50	550	100		Indicative	Possibility through th
phosphoric acid ... %, orthophosphoric acid ... %	National SWEDEN	1		3				SWEDEN, 5 minutes av
	National FINLAND	1		2				
	National NORWAY	1						
	EU NNN	1		2				
	National NORWAY	1		2				
	ACGIH NNN	1		3				URT, eye a
	National POLAND	1		2				
	DFG GERMANY C			4				
	ACGIH	1		3				eye, skin a tract irritat

National SWEDEN	1				
National FRANCE	1	0,2	2	0,5	
National SPAIN	1		2		
National GREECE	1		3		
National DENMARK	1				
National GERMANY	2				
National PORTUGAL	1		3		
National BELGIUM	1		2		
NDS POLAND	1				
NDSch POLAND			2		
CHE SWITZERLAND			2		
NDS NETHERLANDS	1		2		
National CZECH REPUBLIC	1				
National HUNGARY	1		2		
Malaysia OEL	1				
National ESTONIA	1		2		
National LATVIA	1		2		
National CZECH REPUBLIC C			2		
National SLOVAKIA C			2		
National SLOVAKIA	1				
National SLOVENIA	1		2		
National UNITED KINGDOM	1		2		
National BULGARIA	1,0		2,0		
National ROMANIA	1		2		
TUR TURKEY	1		2		
National LITHUANIA	1		2		
National CROATIA	1		2		
EU	1		2		Indicative
CHE SWITZERLAND			4		

chlorobenzene

National SWEDEN	23	5	70	15	SWEDEN, 5 minutes av
National FINLAND	23	5	70	15	FINLAND, 1
National NORWAY	23	5			
National FINLAND	23	5	70	15	FINLAND, 1
National NORWAY	46	10	92	20	
National POLAND	23		70		
DFG GERMANY C			46	10	
ACGIH		10			A3 - Confir with Unknoc Humans;liv
National SWEDEN	23	5			
EU	23	5	70	15	Indicative
National FRANCE	23	5	70	15	
National SPAIN	23	5	70	15	
National GREECE	23	5	70	15	
National DENMARK	23	5			
National FINLAND	23	5	70	15	

National	GERMANY	23	5		
National	PORTUGAL	23	5	70	15
National	NORWAY	23	5	34,5	10
National	BELGIUM	23	5	70	15
NDS	POLAND	23			
NDSch	POLAND			70	
CHE	SWITZERLAND			92	20
NDS	NETHERLANDS	23		70	
National	CZECH REPUBLIC	25			
National	HUNGARY	23		70	
Malaysia	MALAYSIA	46	10		
a OEL					
National	ESTONIA	23	5	70	15
National	LATVIA	23	5	70	15
National	CZECH REPUBLIC			70	
	C				
National	SLOVAKIA			70	
	C				
National	SLOVAKIA	23	5		
National	SLOVENIA	23	5	69	15
National	UNITED KINGDOM	4,7	1	14	3
National	BULGARIA	23,0	5	70,0	15
National	ROMANIA	23	5	70	15
TUR	TURKEY	23	5	70	15
National	LITHUANIA	23	5	70	15
National	CROATIA	23	5	70	15
National	SLOVENIA	23	5	70	15

Biological Exposure Index

CAS-No.	Component	Value	UoM	Medium	Biological Indicator	Sampling Period
108-90-7	chlorobenzene	100	MGGCREAT	Urine	Clorocatecolo	End of turn; End of working week
		20	MGGCREAT	Urine	P-chlorophenol	End of turn; End of working week

Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC Limit	Exposure Route	Exposure Frequency	Remark
2-methoxy-1-methylethyl acetate	108-65-6	0,635	Fresh Water		
		0,0635	Marine water		
		3,29	Freshwater sediments		
		0,329	Marine water sediments		
		6,35	Intermittent release		
		100	Microorganisms in sewage treatments		
		0,29	Soil		

Derived No Effect Level. (DNEL)

Component	CAS-No.	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency	Remark
2-methoxy-1-methylethyl acetate	108-65-6	796		320 mg/kg	Human Dermal	Long Term, systemic effects	
		275		33 mg/m3	Human Inhalation	Long Term, systemic effects	
				36 mg/kg	Human Oral	Long Term, systemic effects	
		550			Human Inhalation	Short Term, local effects	
phosphoric acid ... %, orthophosphoric acid ... %	7664-38-2	2,92		0,73 mg/m3	Human Inhalation	Long Term, local effects	

8.2. Exposure controls

Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

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 ≥ 480 min.

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

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

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

Use adequate protective respiratory equipment.

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: paste various

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: N.A.

Relative density: 1.35 g/cm³

Solubility in water: Insoluble

Partition coefficient (n-octanol/water): N.A.

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Viscosity: 1,300,000.00 cPs

Explosive properties: N.A.

Oxidizing properties: N.A.

Solid/gas flammability: N.A.

9.2. Other information

No additional information

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.

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:

4-isocyanatesulphonyltoluene;-tosyl isocyanate	a) acute toxicity	LC50 Inhalation Rat > 640 ppm 1h LD50 Oral Rat = 2234 mg/kg
diphenylmethanediisocyanate isomers and homologues	a) acute toxicity	LD50 Oral Rat > 10000 mg/kg LD50 Skin Rabbit > 9400 mg/kg LC50 Inhalation Dust Rat = 0,31 mg/l 4h LD50 Skin Rabbit > 9,4 g/kg LC50 Inhalation Rat = 490 mg/m3 4h LD50 Oral Rat = 49 g/kg
	g) reproductive toxicity	NOAEL Inhalation Rat = 12 mg/m3
2-methoxy-1-methylethyl acetate	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg LD50 Skin Rabbit > 5000 mg/kg LC50 Inhalation Dust Rat > 23,8 mg/l LD50 Skin Rabbit > 5 g/kg LD50 Oral Rat = 8532 mg/kg
	e) germ cell mutagenicity	NOAEL Inhalation Rat = 1000 ppm
	g) reproductive toxicity	NOAEL Inhalation Rat = 500 ppm
phosphoric acid ... %, orthophosphoric acid ... %	a) acute toxicity	LD50 Oral Rat = 1530 mg/kg LC50 Inhalation Rat > 0,85 mg/l 1h LD50 Skin Rabbit = 2,740 mg/kg LD50 Skin Rabbit = 2740 mg/kg LC50 Inhalation Rat > 850 mg/m3 1h LD50 Oral Rat = 1530 mg/kg

chlorobenzene a) acute toxicity LD50 Oral Rat 2000 mg/kg
 LD50 Skin Rabbit > 7940 mg/kg
 LC50 Inhalation Rat = 13,5 mg/l 7h

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
- Toxicological kinetics, metabolism and distribution information
- 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:

List of components with eco-toxicological properties

Component	Ident. Numb.	Ecotox Infos
diphenylmethanediisocyanate isomers and homologues	CAS: 9016-87-9 - EINECS: 618-498-9 - INDEX: 615-005-00-9	a) Aquatic acute toxicity : LC50 Fish > 1000 mg/L 96 a) Aquatic acute toxicity : EC50 Daphnia > 1000 mg/L 24 b) Aquatic chronic toxicity : NOEC Daphnia > 10 mg/L - 21 d a) Aquatic acute toxicity : EC50 Algae > 1640 mg/L 72 c) Bacteria toxicity : EC50 > 100 mg/L 3 d) Terrestrial toxicity : NOEC > 1000 mg/kg - 14 d e) Plant toxicity : NOEC > 1000 mg/kg - 14 d
2-methoxy-1-methylethyl acetate	CAS: 108-65-6 - EINECS: 203-603-9 - INDEX: 607-195-00-7	a) Aquatic acute toxicity : LC50 Fish = mg/L 96 a) Aquatic acute toxicity : EC50 Daphnia > 500 mg/L 48 b) Aquatic chronic toxicity : NOEC Fish = 47,5 mg/L - 14 d b) Aquatic chronic toxicity : NOEC Daphnia = 100 mg/L - 21 d a) Aquatic acute toxicity : EC50 Algae > 1000 mg/L 72 a) Aquatic acute toxicity : NOEC Algae = 1000 mg/L 96 a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 161 mg/L 96h IUCLID a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna > 500 mg/L 48h IUCLID
phosphoric acid ... %, orthophosphoric acid ... %	CAS: 7664-38-2 - EINECS: 231-633-2 - INDEX: 015-011-00-6	a) Aquatic acute toxicity : LC50 Fish = 138 mg/L 96 c) Bacteria toxicity : EC50 Bacteria = 270 mg/L
chlorobenzene	CAS: 108-90-7 - EINECS: 203-628-5 - INDEX: 602-033-00-1	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas 7 mg/L 96h EPA

a) Aquatic acute toxicity : LC50 Fish Brachydanio rerio = 91 mg/L 96h IUCLID

d) Terrestrial toxicity : LC50 Worm Eisenia foetida = 29 mg/cm2 48h IUCLID

a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 4,5 mg/L 96h IUCLID

a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus 6,9 mg/L 96h EPA

a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus 4,1 mg/L 96h EPA

a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss 4,1 mg/L 96h EPA

a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata 36,35 mg/L 96h EPA

a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 0,59 mg/L 48h IUCLID

a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata 2,55 mg/L 96h EPA

a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 12,5 mg/L 96h 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. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

A waste code according to European waste catalogue (EWC) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Product:

Do not dispose of waste into sewers.

Do not contaminate ponds, waterways or ditches with chemical or used container.

Send to an authorized waste disposal service.

Contaminated packaging:

Empty remaining content.

Dispose of as unused product.

Do not re-use empty containers.

SECTION 14: Transport information

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number

N.A.

14.2. UN proper shipping name

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

N.A.

14.6. Special precautions for user

N.A.

Road and Rail (ADR-RID) :

N.A.

ADR-Hazard identification number: NA

Air (IATA) :

N.A.

Sea (IMDG) :

N.A.

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

N.A.

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)

Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Provisions related to directive EU 2012/18 (Seveso III):

N.A.

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: 30, 56

SVHC Substances:

No data available

15.2. Chemical safety assessment

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

SECTION 16: Other information

Code	Description
EUH014	Reacts violently with water.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
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2.16/1	Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.2/1B	Skin Corr. 1B	Skin corrosion, Category 1B
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.1/1	Resp. Sens. 1	Respiratory Sensitisation, Category 1
3.4.1/1-1A-1B	Resp. Sens. 1,1A,1B	Respiratory Sensitisation, Category 1,1A,1B
3.4.2/1-1A-1B	Skin Sens. 1,1A,1B	Skin Sensitisation, Category 1,1A,1B
3.6/2	Carc. 2	Carcinogenicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2

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

3.4.1/1 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

COV: 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
N/A: Not Applicable
N/D: Not defined/ Not available
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.

Paragraphs modified from the previous revision:

- 2. HAZARDS IDENTIFICATION
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 9. PHYSICAL AND CHEMICAL PROPERTIES