

Safety Data Sheet

MAPECOAT PU 20 N /B

Safety Data Sheet dated: 14/04/2022 - version 3



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

1.1. Product identifier

Mixture identification:

Trade name: MAPECOAT PU 20 N /B

Trade code: 904UN9999

UFI: MP01-Q070-P00D-R221

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

Recommended use: Crosslinking agent

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)02376731 (office hours) - Fax: +39-02-37673.214 - www.mapei.it

Responsible: sicurezza@mapei.it

1.4. Emergency telephone number

Centro antiveleni, Azienda ospedaliera "Antonio Cardarelli", III Servizio di anestesia e rianimazione, via Antonio Cardarelli 9, Napoli - Tel. 081 5453333

Centro antiveleni, Azienda ospedaliera universitaria Careggi, U.O. Tossicologia medica, via Largo Brambilla 3, Firenze - Tel. 055 7947819

Centro antiveleni, Centro nazionale d'informazione tossicologica, IRCCS Fondazione Salvatore Maugeri Clinica del lavoro e della riabilitazione, via Salvatore Maugeri 10, Pavia - Tel. 0382 24444

Centro antiveleni, Azienda ospedaliera Niguarda Ca' Granda, piazza Ospedale Maggiore 3, Milano - Tel. 02 66101029

Centro antiveleni, Azienda ospedaliera "Papa Giovanni XXIII", Tossicologia clinica, Dipartimento di farmacia clinica e farmacologia, piazza OMS 1, Bergamo - Tel. 800 883300

Centro antiveleni Policlinico "Umberto I", PRGM tossicologia d'urgenza, viale del Policlinico 155, Roma - Tel. 06 49978000

Centro antiveleni del Policlinico "Agostino Gemelli", Servizio di tossicologia clinica, largo Agostino Gemelli 8, Roma - Tel. 06 3054343

Centro antiveleni, Azienda ospedaliera universitaria Riuniti, viale Luigi Pinto 1, Foggia - Tel. 800 183459

Centro antiveleni, Ospedale pediatrico Bambino Gesù, Dipartimento emergenza e accettazione DEA, piazza Sant'Onofrio 4, Roma - Tel. 06 68593726

Centro antiveleni dell'Azienda ospedaliera universitaria integrata (AOUI) di Verona sede di Borgo Trento, piazzale Aristide Stefani, 1 - 37126 Verona - Tel. 800 011858

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

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

Flam. Liq. 3	Flammable liquid and vapour.
Acute Tox. 4	Harmful if inhaled.
Skin Irrit. 2	Causes skin irritation.
Eye Irrit. 2	Causes serious eye irritation.
Skin Sens. 1	May cause an allergic skin reaction.
STOT SE 3	May cause respiratory irritation.
STOT RE 2	May cause damage to organs through prolonged or repeated exposure.

2 The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to the total weight of the mixture.

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:

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust or mist.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/clothing and eye/face protection.
P370+P378	In case of fire, use a CO2 fire extinguisher to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.

Special Provisions:

EUH204	Contains isocyanates. May produce an allergic reaction.
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Contains:

Hexamethylene diisocyanate, oligomers

o-xylene

hexamethylene-di-isocyanate

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

As from 24 August 2023 adequate training is required before industrial or professional use.

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$.

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

Not Relevant

3.2. Mixtures

Mixture identification: MAPECOAT PU 20 N /B

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

Concentration (%) w/w	Name	Ident. Numb.	Classification	Registration Number
$\geq 75 - < 100\%$	Hexamethylene diisocyanate, oligomers	CAS:28182-81-2 EC:500-060-2	Acute Tox. 4, H332; STOT SE 3, H335; Skin Sens. 1, H317	01-2119970543-34-XXXX
$\geq 10 - < 20\%$	o-xylene	CAS:1330-20-7 EC:215-535-7 Index:601-022-00-9	Flam. Liq. 3, H226; Asp. Tox. 1, H304; STOT RE 2, H373; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335; Aquatic Chronic 3, H412	01-2119488216-32-XXXX
$\geq 10 - < 20\%$	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
$\geq 0.25 - < 0.49\%$	hexamethylene-di-isocyanate	CAS:822-06-0 EC:212-485-8 Index:615-011-00-1	Acute Tox. 2, H330 Acute Tox. 4, H302 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317	01-2119457571-37-xxxx
			Specific Concentration Limits: 0,5% \leq C < 100%: Resp. Sens. 1 H334 0,5% \leq C < 100%: Skin Sens. 1 H317	

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:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show him packing or label.

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)

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire, use a CO2 fire extinguisher to extinguish.

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 all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

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.

Use localized ventilation system.

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

Always keep in a well ventilated place.
 Store at below 20 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.
 Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
 Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

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/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Behaviour Note
o-xylene	National	SWEDEN		221	50	442	100	SWEDEN, Short term value, 15 minutes average value
	National	FINLAND		220	50	440	100	FINLAND, hud
	National	NORWAY		108	25			NORWAY, H
	EU	None		221	50	442	100	Skin
	National	NORWAY		109	25	218	50	
	ACGIH	None			100		150	A4, BEI - URT and eye irr, CNS impair
	DFG	GERMANY	C			880	200	
	ACGIH				100		150	A4 - Not Classifiable as a Human Carcinogen; CNS impairment; eye and upper respiratory tract irritation
	National	SWEDEN		221	50			
	National	FRANCE		221	50	442	100	
	National	SPAIN		221	50	442	100	
	National	GREECE		435	100	650	150	
	National	DENMARK		109	25			
	National	FINLAND		220	50	440	100	
	National	GERMANY		440	100			
	National	PORTUGAL		221	50	442	100	
	National	NORWAY		108	25	135	37,5	
	National	BELGIUM		221	50	442	100	
	NDS	POLAND		100				
	NDSch	POLAND				200		
CHE	SWITZERLAND				870	200		
NDS	NETHERLANDS		210		442			
National	CZECH REPUBLIC		200					
National	HUNGARY		221		442			
Malaysi a OEL	MALAYSIA		434	100				

	National	ESTONIA		200	50	450	100		
	National	LATVIA		221	50	442	100		
	National	CZECH REPUBLIC	C			400			
	National	SLOVAKIA	C			442			
	National	SLOVAKIA		221	50				
	National	SLOVENIA		221	50	442	100		
	National	UNITED KINGDOM		220	50	441	100		
	National	BULGARIA		221,0	50	442	100		
	National	ROMANIA		221	50	442	100		
	TUR	TURKEY		221	50	442	100		
	National	LITHUANIA		221	50	442	100		
	National	CROATIA		221	50	442	100		
	EU			221	50	442	100	Indicative	Possibility of significant uptake through the skin (pure)
	DFG	GERMANY	C			440	100		
2-methoxy-1-methylethyl acetate	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 of significant uptake through the skin;
	EU			275	50	550	100	Indicative	Possibility of significant

hexamethylene-di-isocyanate	ACGIH	None		0,005				uptake through the skin
								URT irr, resp sens
	National	SWEDEN	C	0,02	0,002	0,03	0,005	SWEDEN, Ceiling limit value
	National	NORWAY		0,035	0,005			NORWAY, A 4
	National	NORWAY		0,035	0,005	0,07	0,01	
	DFG	GERMANY	C			0,035	0,005	
	ACGIH				0,005			respiratory sensitization; upper respiratory tract irritation
	National	SWEDEN		0,02	0,002			
	National	FRANCE		0,075	0,01	0,15	0,02	
	National	SPAIN		0,035	0,005			
	National	GREECE		0,075	0,01	0,15	0,02	
	National	DENMARK		0,035	0,005			
	National	GERMANY		0,035	0,005			
	National	PORTUGAL			0,005			
	National	NORWAY		0,035	0,005		0,01	
	National	BELGIUM		0,034	0,005			
	NDS	POLAND		0,04				
	NDSch	POLAND				0,08		
	National	CZECH REPUBLIC		0,035				
	National	HUNGARY		0,035		0,035		
	Malaysi a OEL	MALAYSIA		0,034	0,005			
	National	ESTONIA		0,03	0,005	0,07	0,01	
	National	LATVIA		0,05				
	National	CZECH REPUBLIC	C			0,07		
	National	SLOVAKIA		0,035	0,005			
	National	SLOVENIA		0,035	0,005	0,035	0,005	
	National	BULGARIA		0,1				
National	ROMANIA		0,05	0,007	1	0,14		
National	LITHUANIA		0,03	0,005				
National	LITHUANIA	C			0,07	0,01		

Biological Exposure Index

Component	CAS-No.	Value	UoM	Medium	Biological Indicator	Sampling Period
o-xylene	1330-20-7	1,5	GGCREAT	Urine	Methyl uric Acid	End of turn
hexamethylene-di-isocyanate	822-06-0	15	MICROGGCREAT	Urine	1,6-Hexamethylenediamine with hydrolysis	End of turn

Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC Limit	Exposure Route	Exposure Frequency	Remark
Hexamethylene diisocyanate, oligomers	28182-81-2	0,127 mg/l	Fresh Water		
		0,0127 mg/l	Marine water		
		53182 mg/kg	Soil		
		266700 mg/kg	Freshwater sediments		

		26670 mg/kg	Marine water sediments
		38,3 mg/l	Microorganisms in sewage treatments
		1,27 mg/l	Intermittent release
o-xylene	1330-20-7	0,327 mg/l	Fresh Water
		0,327 mg/l	Marine water
		12,46 mg/kg	Freshwater sediments
		12,46 mg/kg	Marine water sediments
		2,31 mg/kg	Soil
		6,58 mg/l	Microorganisms in sewage treatments
		0,32 mg/l	Intermittent release
2-methoxy-1-methylethyl acetate	108-65-6	0,635 mg/l	Fresh Water
		0,0635 mg/l	Marine water
		3,29 mg/kg	Freshwater sediments
		0,329 mg/kg	Marine water sediments
		0,29 mg/kg	Soil
		100 mg/l	Microorganisms in sewage treatments
		6,35 mg/l	Intermittent release
hexamethylene-diisocyanate	822-06-0	0,077 mg/l	Fresh Water
		0,008 mg/l	Marine water
		8,42 mg/l	Microorganisms in sewage treatments
		0,013 mg/kg	Freshwater sediments
		0,001 mg/kg	Marine water
		0,003	Soil

Derived No Effect Level. (DNEL)

Component	CAS-No.	Worker Industrial	Worker Professional	Consumer	Exposure Route	Exposure Frequency	Remark
Hexamethylene diisocyanate, oligomers	28182-81-2	1 mg/m ³			Human Inhalation	Short Term, local effects	
		0,5 mg/m ³			Human Inhalation	Long Term, local effects	
o-xylene	1330-20-7	289 mg/m ³	174 mg/m ³		Human Inhalation	Short Term, local effects	
		289 mg/m ³	174 mg/m ³		Human Inhalation	Short Term, systemic effects	
		180 mg/kg	108 mg/kg		Human Dermal	Long Term, systemic effects	
		77 mg/m ³	14,8 mg/m ³		Human Inhalation	Long Term, systemic effects	
			1,6 mg/kg		Human Oral	Long Term, systemic effects	

2-methoxy-1-methylethyl acetate	108-65-6	153,5 mg/kg	54,8 mg/kg	Human Dermal	Long Term, systemic effects
		275 mg/m ³	33 mg/m ³	Human Inhalation	Long Term, systemic effects
			1,67 mg/kg	Human Oral	Long Term, systemic effects
hexamethylene-di-isocyanate	822-06-0	0,035 mg/m ³		Human Inhalation	Long Term, systemic effects
		0,07 mg/m ³		Human Inhalation	Short Term, systemic effects
		0,035 mg/m ³		Human Inhalation	Long Term, local effects
		0,07 mg/m ³		Human Inhalation	Short Term, local 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 ISO 374:

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

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

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

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

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 ISO 374 for gloves and EN ISO 166 for goggles), correctly maintained and stored. Consult the supplier to check the suitability of equipment against specific chemicals and for user information.

Respiratory protection must be used where exposure levels exceed workplace exposure limits. Refer to appropriate EN standards, like EN 136, 140, 143, 149, 14387 for information on selection and use of appropriate respiratory protection equipment.

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

Use adequate protective respiratory equipment.

Hygienic and Technical measures

Not available

Appropriate engineering controls:

Not available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Appearance: liquid

Color: clear

Odour: solvent like

Melting point / freezing point: Not available

Initial boiling point and boiling range: 145 °C (293 °F)

Flammability: The product is classified Flam. Liq. 3 H226

Upper/lower flammability or explosive limits: Not available

Flash point: 38 °C (100 °F)

Auto-ignition temperature: Not available

Decomposition temperature: Not available

pH: Not available

Viscosity: 320.00 cPs

Kinematic viscosity: Not available

Solubility in water: immiscible

Solubility in oil: Not available

Partition coefficient (n-octanol/water): Not available

Vapour pressure: 10.00

Relative density: 1.07 g/cm³

Vapour density: Not available

Particle characteristics:

Particle size: Not available

9.2. Other information

Miscibility: Not available

Conductivity: Not available

No other relevant 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

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological information of the mixture:

a) acute toxicity	The product is classified: Acute Tox. 4(H332) ATEmix - Inhalation (Mist) : 1.77096 mg/l
b) skin corrosion/irritation	The product is classified: Skin Irrit. 2(H315)
c) serious eye damage/irritation	The product is classified: Eye Irrit. 2(H319)
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1(H317)
e) germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified Based on available data, the classification criteria are not met
h) STOT-single exposure	The product is classified: STOT SE 3(H335)
i) STOT-repeated exposure	The product is classified: STOT RE 2(H373)
j) aspiration hazard	Not classified Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

Hexamethylene diisocyanate, oligomers	a) acute toxicity	LD50 Oral Rat > 2500 mg/kg	ratto femmina
		LD50 Skin Rat > 2000 mg/kg	
		LD50 Skin Rabbit > 2000 mg/kg	
		LC50 Inhalation Mist Rat = 0,390 mg/l 4h	ratto femmina
		LC50 Inhalation Rat = 18500 mg/m ³ 1h	
o-xylene	a) acute toxicity	LD50 Oral Rat > 2000 mg/kg	
		LC50 Inhalation Vapour Rat = 11 mg/l 4h	
		LD50 Skin Rabbit = 3200 mg/kg	
		LD50 Skin Rabbit > 4350 mg/kg	
		LC50 Inhalation Rat = 29,08 mg/l 4h	
		LD50 Oral Rat = 3500 mg/kg	
	e) germ cell mutagenicity	NOAEL Inhalation Rat > 2000 ppm	
	f) carcinogenicity	NOAEL Oral Rat = 500 mg/kg	

		NOAEL Oral Rat = 1000 mg/kg
	g) reproductive toxicity	NOAEL Inhalation Rat = 500 ppm
2-methoxy-1-methylethyl acetate	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg
		LD50 Skin Rabbit > 5 g/kg
		LD50 Oral Rat = 8532 mg/kg
hexamethylene-di-isocyanate	a) acute toxicity	LD50 Oral Rat = 746 mg/kg
		LC50 Inhalation Vapour Rat = 0,124 mg/l 4h
		LD50 Skin Rat > 7000 mg/kg

11.2 Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

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 Eco-Toxicological properties of the product

Not classified for environmental hazards

Based on available data, the classification criteria are not met

List of components with eco-toxicological properties

Component	Ident. Numb.	Ecotox Infos
Hexamethylene diisocyanate, oligomers	CAS: 28182-81-2 - EINECS: 500-060-2	a) Aquatic acute toxicity : LC50 Fish > 100 mg/L 96
		a) Aquatic acute toxicity : EC50 Daphnia > 100 mg/L 48
		a) Aquatic acute toxicity : EC50 Algae > 1000 mg/L 72
		c) Bacteria toxicity : EC50 Bacteria = 3828 mg/L 3
o-xylene	CAS: 1330-20-7 - EINECS: 215-535-7 - INDEX: 601-022-00-9	a) Aquatic acute toxicity : EC50 Daphnia = 165 mg/L 48
		a) Aquatic acute toxicity : LC50 Fish > 2 mg/L 96
		a) Aquatic acute toxicity : EC50 Algae = 2,2 mg/L 72
		c) Bacteria toxicity : EC50 = 96 mg/L 24
		b) Aquatic chronic toxicity : NOEC Fish > 1,3 mg/L
		b) Aquatic chronic toxicity : NOEC Daphnia = 1,57 mg/L
		a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 13,4 mg/L 96h EPA
		a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss 2,661 mg/L 96h EPA
		a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss 13,5 mg/L 96h IUCLID
		a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus 13,1 mg/L 96h EPA
		a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus = 19 mg/L 96h EPA
		a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus 7,711 mg/L 96h EPA
		a) Aquatic acute toxicity : LC50 Fish Pimephales promelas 23,53 mg/L 96h EPA
		a) Aquatic acute toxicity : LC50 Fish Cyprinus carpio = 780 mg/L 96h EPA
		a) Aquatic acute toxicity : LC50 Fish Cyprinus carpio > 780 mg/L 96h IUCLID

2-methoxy-1-methylethyl acetate CAS: 108-65-6 - a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata 30,26 mg/L 96h EPA
EINECS: 203- a) Aquatic acute toxicity : EC50 Daphnia water flea = 3,82 mg/L 48h
603-9 - INDEX: a) Aquatic acute toxicity : LC50 Daphnia Gammarus lacustris = 0,6 mg/L 48h
607-195-00-7 a) Aquatic acute toxicity : EC50 Daphnia = 408 mg/L 48h

hexamethylene-di-isocyanate CAS: 822-06-0 - a) Aquatic acute toxicity : LC50 Fish = 130,00000 mg/L 96h
EINECS: 212- b) Aquatic chronic toxicity : NOEC Fish = 47,50000 mg/L 14d
485-8 - INDEX: b) Aquatic chronic toxicity : NOEC Daphnia >= 100,00000 mg/L 21d
615-011-00-1 b) Aquatic chronic toxicity : NOEC Algae >= 1000,00000 mg/L

a) Aquatic acute toxicity : EC50 Algae = 77,4 mg/L 72

a) Aquatic acute toxicity : LC50 Fish = 8,8 mg/L 96
a) Aquatic acute toxicity : LC50 Fish Brachydanio rerio = 26,1 mg/L 96h
IUCLID

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 or endocrine disruptor substances present in concentration $\geq 0.1\%$.

12.6 Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

12.7 Other adverse effects

Not available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Recover if possible.

A waste code (EWC) according to European List of Waste (LoW) cannot be specified, due to dependence on the usage. Contact and send to an authorized waste disposal service.

Methods of disposal:

Disposal of this product, solutions, packaging and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor.

Do not dispose of waste into sewers.

Hazardous waste: Yes

Disposal considerations:

Do not allow to enter drains or watercourses.

Dispose of product according to all federal, state and local applicable regulations.

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

Dispose of containers contaminated by the product in accordance with local or national legal provisions. For further information, contact your local waste authority.

Special precautions:

This material and its container must be disposed of in a safe way. Care should be taken when handling untreated empty containers.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Empty containers or liners may retain some product residues. Do not re-use empty containers.

SECTION 14: Transport information

14.1. UN number or ID number

1139

14.2. UN proper shipping name

ADR-Shipping Name: COATING SOLUTION

IATA-Technical name: COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)

IMDG-Technical name: COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle under-coating, drum or barrel lining)

14.3. Transport hazard class(es)

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-E, S-E

14.6. Special precautions for user

Road and Rail (ADR-RID) :

ADR-Label: 3

ADR-Hazard identification number: 30

ADR-Special Provisions: -

ADR-Transport category (Tunnel restriction code): 3 (D/E)

Air (IATA) :

IATA-Passenger Aircraft: 355

IATA-Cargo Aircraft: 366

IATA-Label: 3

IATA-Subsidiary hazards: -

IATA-Erg: 3L

IATA-Special Provisioning: A3

Sea (IMDG) :

IMDG-Stowage Code: Category A

IMDG-Stowage Note: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisioning: 955

IMDG-EMS: F-E, S-E

14.7. Maritime transport in bulk according to IMO instruments

Not Applicable

SECTION 15: Regulatory information

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

VOC (2004/42/EC) : 340 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) n. 2020/878

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)
 Regulation (EU) n. 2018/1480 (ATP 13 CLP)
 Regulation (EU) n. 2020/217 (ATP 14 CLP)
 Regulation (EU) n. 2020/1182 (ATP 15 CLP)

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

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
Products belongs to category P5c	5000	50000

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: 74, 75

SVHC Substances:

SVHC substances not present in a concentration $\geq 0.1\%$ (w/w)

National regulations

Produktregisteret Norge: 647611

German Water Hazard Class (WGK)

2

15.2. Chemical safety assessment

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

SECTION 16: Other information

Code	Description
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/2/Inhal	Acute Tox. 2	Acute toxicity (inhalation), Category 2
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
3.10/1	Asp. Tox. 1	Aspiration hazard, Category 1
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
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
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/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 Classification procedure

(EC) Nr. 1272/2008

2.6/3	On basis of test data
3.1/4/Inhal	Calculation method
3.2/2	Calculation method
3.3/2	Calculation method
3.4.2/1	Calculation method
3.8/3	Calculation method
3.9/2	Calculation method

If appropriate, specific provisions in relation to possible training for workers are mentioned in section 2. Any training related to safety in the workplace must in any case refer to a risk assessment that must be carried out by a company safety officer taking into account the specific operating and environmental conditions in which the products are used.

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

KAFH: KAFH

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.

*** Sheet model entirely changed in compliance to regulatory update.**