

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

1.1. Product identifier

Mixture identification:

Trade name: PU Low Monomer Hardener
Trade code: **CTH31LM**
UFI: 5SYY-91RX-G00H-EGE8

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

Recommended use: Surface coating
Uses advised against: Use only for explicitly recommended uses.

1.3. Details of the supplier of the safety data sheet

Company: Sirca S.p.A.
Viale Roma, 85
35010 Sandono di Massanzago (PD) - ITALY
Tel. +39 0499322311
Email: safety@sirca.it

1.4. Emergency telephone number

National Poisons Information Centre:
Phone +353 (0) 1 809 2566

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

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

Flam. Liq. 2	Highly flammable liquid and vapour.
Skin Irrit. 2	Causes skin irritation.
Eye Irrit. 2	Causes serious eye irritation.
Skin Sens. 1	May cause an allergic skin reaction.
Repr. 2	Suspected of damaging fertility or the unborn child.
STOT SE 3	May cause drowsiness or dizziness.
STOT RE 2	May cause damage to organs through prolonged or repeated exposure.
Asp. Tox. 1	May be fatal if swallowed and enters airways.

Adverse physicochemical, human health and environmental effects:
No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Hazard pictograms and Signal Word



Danger

Hazard statements

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use CO2, Foam, Chemical powders For extinction.
P403+P235	Store in a well-ventilated place. Keep cool.

Contains

ethyl acetate	
toluene	
Aromatic polyisocyanate	
n-butyl acetate	
Hesamethylene diisocyanate, oligomerisation product	May produce an allergic reaction.
m-tolyldiene diisocyanate (Mixture of isomers)	May produce an allergic reaction.

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

None.

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

Other Hazards: No other hazards

This product contains isocyanates. Producer's specifications are as follows: ready-to-use paints containing isocyanates may irritate mucosae, particularly those of the respiratory system, and may give rise to hypersensitivity reactions. Vapour or aerosol inhalation may lead to sensitization. Please take all the measures used for all solvent-containing paints while manipulating isocyanate-containing paints. Avoid vapour and aerosol inhalation. People with allergic or asthmatic precedents or subject to respiratory disorders should not handle paints containing isocyanates.

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: PU Low Monomer Hardener

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

Qty	Name	Ident. Numb.	Classification	Registration Number
25-48 %	ethyl acetate	CAS:141-78-6 EC:205-500-4 Index:607-022-00-5	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066 Acute Toxicity Estimate : ATE - Oral : 4934 mg/kg bw ATE - Dermal : 20000 mg/kg bw ATE - Inhalation (Vapours) : 29.3 mg/l	01-2119475103-46-xxxx
20-25 %	toluene	CAS:108-88-3 EC:203-625-9 Index:601-021-00-3	Flam. Liq. 2, H225; Skin Irrit. 2, H315; STOT SE 3, H336; STOT RE 2, H373; Asp. Tox. 1, H304; Repr. 2, H361; Aquatic Chronic 3, H412 Acute Toxicity Estimate : ATE - Oral : 5000 mg/kg bw ATE - Dermal : 12267 mg/kg bw ATE - Inhalation (Vapours) : 25.7 mg/l	01-2119471310-51-xxxx

12.5-20 %	Aromatic polyisocyanate	CAS:528598-79-0 EC:642-411-3	Eye Irrit. 2, H319; Skin Sens. 1, H317	
12.5-20 %	n-butyl acetate	CAS:123-86-4 EC:204-658-1 Index:607-025-00-1	Flam. Liq. 3, H226; STOT SE 3, H336, EUH066 Acute Toxicity Estimate : ATE - Oral : 10736 mg/kg bw ATE - Dermal : 14000 mg/kg bw ATE - Inhalation (Vapours) : 21 mg/l	01-2119485493-29-xxxx
5-7 %	Hesamethylene diisocyanate, oligomerisation product	CAS:28182-81-2	Acute Tox. 4, H332; STOT SE 3, H335; Skin Sens. 1, H317 Acute Toxicity Estimate : ATE - Oral : 5000 mg/kg bw ATE - Dermal : 2000 mg/kg bw ATE - Inhalation (Vapours) : 400 mg/l	
0.0015-0.05 %	m-tolylidene diisocyanate (Mixture of isomers)	CAS:26471-62-5 EC:247-722-4 Index:615-006-00-4	Carc. 2, H351; Skin Irrit. 2, H315; STOT SE 3, H335; Aquatic Chronic 3, H412; Eye Irrit. 2, H319; Skin Sens. 1, H317; Resp. Sens. 1, H334; Acute Tox. 2, H330 Specific Concentration Limits: C ≥ 0,1%: Resp. Sens. 1 H334 Acute Toxicity Estimate: ATE - Oral: 5110mg/kg bw ATE - Dermal: 9400mg/kg bw ATE - Inhalation (Dust/mist): 101mg/l ATE - Inhalation (Vapours): 0.47mg/l	01-2119454791-34-xxxx
0.0015-0.05 %	hexamethylene-di-isocyanate	CAS:822-06-0 EC:212-485-8 Index:615-011-00-1	Acute Tox. 4, H302; Eye Irrit. 2, H319; Acute Tox. 2, H330; STOT SE 3, H335; Skin Irrit. 2, H315; Resp. Sens. 1, H334; Skin Sens. 1, H317 Specific Concentration Limits: C ≥ 0,5%: Resp. Sens. 1 H334 C ≥ 0,5%: Skin Sens. 1 H317 Acute Toxicity Estimate: ATE - Oral: 746mg/kg bw ATE - Dermal: 7000mg/kg bw ATE - Inhalation (Vapours): 0.124mg/l	01-2119457571-37-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 off safely.

In case of eyes contact:

Do not use eyewash or ointment of any kind (before obtaining an examination or advice from an eye specialist).

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 label hazardous.

In case of Inhalation:

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

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

If breathing is irregular or stopped, administer artificial respiration.

In sensitized subjects, a reaction may occur even at minimal concentrations of diisocyanates.

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

Respiratory tract irritation

Eye damages

Skin Irritation

Contact a poisons centre

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).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire: Use CO₂, Foam, Chemical powders For extinction.

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.

Cool the containers exposed to the fire with water.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

Wear personal protection equipment.

Remove all sources of ignition.

Collect the spilled product with no-sparking tools.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Eliminate all unguarded flames and possible sources of ignition. Do not smoke.

Suitable material for taking up: absorbing material, organic, sand

Collect spilled material with non-sparking equipment.

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep away from flame and sparks. Avoid accumulating electrostatic charge.

Place recipients on the ground whilst decanting, and wear anti-static clothing and shoes.

Avoid contact with skin and eyes, inhalation of vapours and mists.

Exercise the greatest care when handling or opening the container.

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.

Work clothes must be changed before entering the dining areas.

Do not eat or drink while working.
Do not smoke 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 30 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

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

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

No further recommendations. Refer to point 1.2

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Behaviour	Notes
ethyl acetate CAS: 141-78-6	National	NEW ZEALAND	200,000	200,000				
	(OEL (IT))	ITALY	734,000	200,000	1469,000	400,000		
	ACGIH			400,000				
	National	IRELAND	734,000	200,000	1468,000	400,000		
	EU		734	200	1468	400		
toluene CAS: 108-88-3	National	IRELAND	192,000	50,000	384,000	100,000		skin.oto.bio
	National	NEW ZEALAND	75,000	20,000	377,000	100,000		skin.oto.bio
	National	CHINA	50,000		100,000			
	(OEL (IT))	ITALY	192,000	50,000			Binding	skin
	ACGIH			20,000				A4, BEI - Visual impair, female repro, pregnancy loss
	EU		192	50	384	100		Skin
n-butyl acetate CAS: 123-86-4	NIOSH	CHINA	200,000		300,000			
	ACGIH			50,000		150,000		Eye and URT irr
	(OEL (IT))	ITALY	241,000	50,000	723,000	150,000		
	TWA (Italia)			150,000		200,000		
	National	IRELAND	241,000	50,000	723,000	150,000		
	EU		241	50	723	150		
Hesamethylene diisocyanate, oligomerisation product CAS: 28182-81-2	(OEL (IT))		1,000					
m-tolylidene diisocyanate (Mixture of isomers) CAS: 26471-62-5	VLE			0,005		0,02		
	ACGIH		0,04	0,01	0,14	0,02		A4 sen

	EU	0,006	0,012	Skin; Dermal and respiratory sensitisation
hexamethylene-di-isocyanate CAS: 822-06-0	TWA CHINA (Italia)		0,030	
	TWA (Italia)	0,034	0,005	
	EU	0,006	0,012	Skin; Dermal and respiratory sensitisation

Predicted No Effect Concentration (PNEC) values

	PNEC Limit	Exposure Route	Exposure Frequency	Remark
ethyl acetate CAS: 141-78-6	0,26 mg/l	Fresh Water		
	0,026 mg/l	Marine water		
	1,25 mg/kg	Freshwater sediments		
	0,125 mg/kg	Marine water sediments		
	0,24 mg/kg	Soil (agricultural)		
	200 mg/kg	orally (secondary poisoning)		
	650 mg/l	STP		
toluene CAS: 108-88-3	0,68 mg/l	Fresh Water		
	0,68 mg/l	Marine water		
	2,89 mg/kg	Soil (agricultural)		
	16,39 mg/l	Marine water sediments		
	16,39 mg/l	Freshwater sediments		
	13,61 mg/l	STP		
n-butyl acetate CAS: 123-86-4	0,18 mg/l	Fresh Water		
	0,018 mg/l	Marine water		
	0,981 mg/kg	Freshwater sediments		
	0,098 mg/kg	Marine water sediments		
	0,09 mg/kg	Soil (agricultural)		
	35,6 mg/l	STP		
Hesamethylene diisocyanate, oligomerisation product CAS: 28182-81-2	6,46 mg/l	STP		
	127 µg/L	Fresh Water		
	12,7 µg/L	Marine water		
	1270 µg/L	Intermittent releases (fresh water)		
	266700 mg/kg	Freshwater sediments		
	53200 mg/kg	Soil		
m-tolylidene diisocyanate (Mixture of isomers) CAS: 26471-62-5	0,013 mg/l	Fresh Water		
	0,001 mg/l	Marine water		
	1 mg/l	STP		
	1 mg/kg dwt	Soil		
hexamethylene-di-isocyanate CAS: 822-06-0	0,008 mg/l	Marine water		
	0,077 mg/l	Fresh Water		
	0,013 mg/kg	Freshwater sediments		Dry weight
	0,001 mg/kg	Marine water sediments		Dry weight

0,003 mg/kg Soil (agricultural)
8,42 mg/l Microorganisms in sewage
treatments

Dry weight

Derived No Effect Level (DNEL) values

	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency	Remark
ethyl acetate CAS: 141-78-6	1468 mg/m3		734 mg/m3	Human Inhalation	Short Term, systemic effects	
	1468 ppm			Human Inhalation	Short Term (acute)	
	63 mg/Kg- bw/day			Human Dermal	Long Term, systemic effects	
	734 mg/m3			Human Inhalation	Long Term, local effects	
	734 mg/m3			Human Inhalation	Long Term, systemic effects	
			4,5 mg/Kg- bw/day	Human Oral	Long Term, systemic effects	
			734 mg/m3	Human Inhalation	Short Term (acute)	
			734 mg/m3	Human Inhalation	Long Term, systemic effects	
			37 mg/Kg- bw/day	Human Dermal	Long Term, local effects	
			367 mg/m3	Human Inhalation	Short Term, local effects	
			367 mg/m3	Human Inhalation	Long Term, systemic effects	
toluene CAS: 108-88-3			226 mg/m3	Human Inhalation	Short Term, systemic effects	
			226 mg/m3	Human Inhalation	Short Term, local effects	
			226 mg/m3	Human Dermal	Long Term, systemic effects	
			56,5 mg/m3	Human Inhalation	Long Term, systemic effects	
			8,13 mg/Kg- bw/day	Human Oral	Long Term, systemic effects	
	384 mg/kg/day			Human Dermal	Long Term, systemic effects	
	384 mg/m3			Human Inhalation	Short Term, systemic effects	
	192 mg/m3			Human Inhalation	Long Term, systemic effects	
n-butyl acetate CAS: 123-86-4		600 mg/m3		Human Inhalation	Short Term, local effects	
		300 mg/m3		Human Inhalation	Long Term, local effects	
		11 mg/kg		Human Dermal	Long Term, systemic effects	
		11 mg/kg		Human Dermal	Short Term, systemic effects	
			300 mg/kg	Human Inhalation	Short Term, local effects	
			35,7 mg/m3	Human Inhalation	Long Term, local effects	
			6 mg/kg	Human Dermal	Short Term, systemic effects	
			2 mg/kg	Human Oral	Long Term, systemic effects	
			2 mg/kg	Human Oral	Short Term, systemic effects	

Hesamethylene diisocyanate, oligomerisation product CAS: 28182-81-2	0,5 mg/m3	Human Inhalation	Long Term, local effects
	1 mg/m3	Human Inhalation	Short Term, systemic effects
m-tolylidene diisocyanate (Mixture of isomers) CAS: 26471-62-5	1 mg/m3	Human Inhalation	Short Term, local effects
	0,14 mg/m3	Human Inhalation	Short Term, systemic effects
	0,14 mg/m3	Human Inhalation	Short Term, local effects
	0,035 mg/m3	Human Inhalation	Short Term, systemic effects
	0,004 mg/m3	Human Inhalation	Long Term, local effects
hexamethylene-diisocyanate CAS: 822-06-0	0,07 mg/m3	Human Inhalation	Short Term, systemic effects
	0,035 mg/m3	Human Inhalation	Long Term, systemic effects
	0,035 mg/m3	Human Inhalation	Long Term, local effects
	0,07 mg/m3	Human Inhalation	Short Term, local effects

8.2. Exposure controls

Hygienic and Technical measures

Handle according to good hygiene and safety standards, observing the usual precautions for handling chemical products.

Use adequate ventilation/extraction in the working environment.

The choice of personal protective equipment is left to the provisions of the chemical risk assessment.

Eye protection:

Use eye protection devices. Example: closed safety visors, goggles with side protection. Do not wear contact lenses.

Protection for skin:

Wear work clothes with long sleeves and safety footwear. It is recommended to wear protective overgarments with antistatic properties.

Protection for hands:

Due to the synergistic effect of the substances contained in the formulation it is not possible to identify a single material capable of resisting their combination. Multilayer protective gloves for mixtures of substances may be suitable. Always refer to the protection degree and permeation rate data provided by the glove manufacturer with regard to the substances listed in point 3 of this sheet.

Example:

Butyl: Provides resistance to acids, alcohols, aldehydes, ketones, carboxylic acids and glycol esters. Thickness >0.35 mm; permeation time >240 min.

Viton: Provides resistance to aliphatic, halogenated and aromatic hydrocarbons, alcohols, carboxylic acids, glycol ethers and esters and mineral acids. Thickness >0.35 mm; permeation time >240 min.

Nitrile: Provides resistance from bases, oils, alcohols, aliphatic hydrocarbon solvents, fats and glycol ethers. Thickness >0.35 mm; permeation time >240 min.

Respiratory protection:

Use respiratory protection where ventilation is insufficient or exposure is prolonged.

Use an adequate respiratory protection device, e.g. A2 or in case of presence of dust/aerosols A2P2 or A2P3 .

Thermal Hazards:

N.A.

Environmental exposure controls:

Take all technical precautions necessary to avoid the spread of the product in the surrounding environment.

Check that emissions into the atmosphere comply with current legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Appearance and colour: Liquid transparent

Odour: characteristic

Odour threshold: Not available for the mixture.

pH: N.A.

Kinematic viscosity: <= 20,5 mm2/sec (40 °C)

Melting point / freezing point: > 1 °C / < 0 °C

Initial boiling point and boiling range: > 55 °C

Flash point: < 23°C

Upper/lower flammability or explosive limits: 20.00 % v/v (UEL). 1.00 % v/v (LEL). (Refer to Substances)

Vapour density: > 1,2 kg/mc

Vapour pressure: Some contained substances may have vapor pressure >=0.1 kPa. Refer to the percentage of Volatile Organic Compounds in section 15.

Relative density: 0.96 kg/l

Solubility in water: Insoluble

Solubility in oil: Soluble

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

Auto-ignition temperature: 250 °C

Decomposition temperature: N.A.

Flammability: The product is classified Flam. Liq. 2 H225

Particle characteristics:

Particle size: N.A.

9.2. Other information

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

Avoid accumulating electrostatic charge.

Vapours can form explosive mixtures with air.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

vapours potentially dangerous to health may be released.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

a) acute toxicity	Not classified
	Based on available data, the classification criteria are not met
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	The product is classified: Repr. 2(H361)
h) STOT-single exposure	The product is classified: STOT SE 3(H336)
i) STOT-repeated exposure	The product is classified: STOT RE 2(H373)
j) aspiration hazard	The product is classified: Asp. Tox. 1(H304)

Toxicological information on main components of the mixture:

ethyl acetate	a) acute toxicity	ATE - Oral : 4934 mg/kg bw
		ATE - Dermal : 20000 mg/kg bw
		ATE - Inhalation (Vapours) : 29.3 mg/l
		LD50 Skin Rabbit > 20000 mg/kg
		LD50 Oral Rat = 4934, mg/kg
		LC50 Inhalation Rat > 29,3 mg/l 4h
		LD50 Oral Rabbit = 4934 mg/kg body weight

b) skin corrosion/irritation Skin Irritant Skin Rabbit Negative
e) germ cell mutagenicity Genotoxicity Negative
j) aspiration hazard Respiratory Tract Corrosive Inhalation Positive

toluene a) acute toxicity ATE - Oral : 5000 mg/kg bw
ATE - Dermal : 12267 mg/kg bw
ATE - Inhalation (Vapours) : 25.7 mg/l
LD50 Oral Rat 5000 mg/kg 24h
LD50 Skin Rabbit 12267 mg/kg
LC50 Inhalation Rat 25,7 mg/l 4h
LD50 Skin Rat 5000, mg/kg
b) skin corrosion/irritation Skin Irritant Yes

Aromatic polyisocyanate a) acute toxicity LD50 Oral Rat > 2000 mg/kg
LC50 Inhalation Rat > 3820 mg/l 4h
b) skin corrosion/irritation Skin Irritant Rabbit Positive
Eye Irritant Rabbit Positive

n-butyl acetate a) acute toxicity ATE - Oral : 10736 mg/kg bw
ATE - Dermal : 14000 mg/kg bw
ATE - Inhalation (Vapours) : 21 mg/l
LC50 Inhalation Rat > 21 mg/l 4h
LD50 Oral Rat = 10736 mg/kg
LD50 Skin Rabbit > 14000 mg/kg
Method OECD linee guide 402

Hexamethylene diisocyanate, oligomerisation product a) acute toxicity ATE - Oral : 5000 mg/kg bw
ATE - Dermal : 2000 mg/kg bw
ATE - Inhalation (Vapours) : 400 mg/l
LD50 Oral Rat > 2500, mg/kg
LC50 Inhalation Rat = 0,39 mg/l 4h
LD50 Skin Rabbit > 2000 mg/kg
LD50 Skin Rat > 2000, mg/kg
female

m-tolylidene diisocyanate (Mixture of isomers) a) acute toxicity ATE - Oral : 5110 mg/kg bw
ATE - Dermal : 9400 mg/kg bw
ATE - Inhalation (Dust/mist) : 101 mg/l
ATE - Inhalation (Vapours) : 0.47 mg/l
LD50 Oral Rat male = 5110 mg/kg
LD50 Oral Rat Female = 4130 mg/kg
LD50 Skin Rabbit > 9400 mg/kg
LC50 Inhalation Mist Rat = 101 mg/m3 4h
Satur vapor concentration at 25°C : 255 mg/m3
LC50 Inhalation Vapour Rat 0,47 mg/l 1h
b) skin corrosion/irritation Skin Irritant Skin Rabbit Positive
j) aspiration hazard Respiratory Tract Corrosive Inhalation Rabbit Positive

hexamethylene-di-isocyanate a) acute toxicity ATE - Oral : 746 mg/kg bw
ATE - Dermal : 7000 mg/kg bw
ATE - Inhalation (Vapours) : 0.124 mg/l
LD50 Oral Rat = 746 mg/kg
Method: OECD TG 401

LD50 Skin Rabbit > 7000 mg/kg
 LC50 Inhalation Rat = 0,124 mg/l 4h

 NOAEL Inhalation Rat 0,035 mg/m3 6h
 LOAEL Inhalation Rat 0,175 mg/m3 6h

Method: OECD TG 402
 Method: OECD TG 403 - Conc. del
 vapore saturo di 1,6-HDI a 25°C
 0,095 mg/l

 Method OECD linee guide 453
 Method OECD linee guide 453

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration >= 0.1%

11.2. Information on other hazards

None known

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.

No data available for the product

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
ethyl acetate	CAS: 141-78-6 - EINECS: 205- 500-4 - INDEX: 607-022-00-5	a) Aquatic acute toxicity : LC50 Fish = 220 mg/l 96 a) Aquatic acute toxicity : EC50 Daphnia = 154 mg/l 48 a) Aquatic acute toxicity : EC50 Algae = 3300 mg/l 48 b) Aquatic chronic toxicity : NOEC Algae > 100 mg/l 72
toluene	CAS: 108-88-3 - EINECS: 203- 625-9 - INDEX: 601-021-00-3	a) Aquatic acute toxicity : LC50 Fish = 5,5 ml/l 96 a) Aquatic acute toxicity : EC50 Algae > 134 ml/l 72 b) Aquatic chronic toxicity : EC50 Daphnia = 3,78 mg/l 48
Aromatic polyisocyanate	CAS: 528598- 79-0 - EINECS: 642-411-3	a) Aquatic acute toxicity : EC50 Active mud > 10000 mg/l
n-butyl acetate	CAS: 123-86-4 - EINECS: 204- 658-1 - INDEX: 607-025-00-1	a) Aquatic acute toxicity : LC50 Fish = 64 mg/l 48 a) Aquatic acute toxicity : EC50 Daphnia = 73 mg/l 24 a) Aquatic acute toxicity : EC50 Algae = 674 mg/l 72
Hesamethylene diisocyanate, oligomerisation product	CAS: 28182-81- 2	a) Aquatic acute toxicity : LC50 Fish Brachydanio rerio = 8,9 mg/l 96 a) Aquatic acute toxicity : LC50 Daphnia > 100 mg/l 48 a) Aquatic acute toxicity : ErC50 Algae > 100 mg/l 72 a) Aquatic acute toxicity : EC50 Daphnia = 127 mg/l
m-tolylidene diisocyanate (Mixture of isomers)	CAS: 26471-62- 5 - EINECS: 247-722-4 - INDEX: 615- 006-00-4	a) Aquatic acute toxicity : LC50 Fish = 133 mg/l 96 a) Aquatic acute toxicity : ErC50 Algae = 4300 mg/l 96 a) Aquatic acute toxicity : EC50 Daphnia = 12,5 mg/l 48 a) Aquatic acute toxicity : NOEC Daphnia = 1,1 mg/l 504 a) Aquatic acute toxicity : ErC50 Algae 4300 mg/l 96

hexamethylene-di-isocyanate

CAS: 822-06-0 - a) Aquatic acute toxicity : LC50 Fish Brachydanio rerio = 22 mg/l 96h
EINECS: 212-485-8 - INDEX:
615-011-00-1

a) Aquatic acute toxicity : ErC50 Algae Desmodesmus subspicatus > 77,4 mg/l

b) Aquatic chronic toxicity : LOEC Algae Desmodesmus subspicatus = 12,6 mg/l 72h - EU method C.3

b) Aquatic chronic toxicity : NOEC Algae Desmodesmus subspicatus = 11,7 mg/l 72h - EU method C.3

a) Aquatic acute toxicity : EC0 Daphnia >= 89,1 mg/l 48 - EU C.2

a) Aquatic acute toxicity : LC0 Fish Danio rerio >= 82,8 mg/l 96h - EU C.1

No endocrine disruptor substances present in concentration >= 0.1%

12.2. Persistence and degradability

None known

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 >= 0.1%

12.6. Endocrine disrupting properties

None known

12.7. 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.

SECTION 14: Transport information

14.1. UN number or ID number

1263

14.2. UN proper shipping name

ADR-Shipping Name: PAINT

IATA-Shipping Name: PAINT

IMDG-Shipping Name: PAINT

14.3. Transport hazard class(es)

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

Toxic ingredients quantity: 0.00

Very toxic ingredients quantity: 0.00

Marine pollutant: No

Environmental Pollutant: No

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 3

ADR - Hazard identification number: 33

ADR-Special Provisions: 163 367 640C 650

ADR-Transport category (Tunnel restriction code): 2 (D/E)

Air (IATA):

- IATA-Passenger Aircraft: 353
- IATA-Cargo Aircraft: 364
- IATA-Label: 3
- IATA-Subsidiary hazards: -
- IATA-Erg: 3L
- IATA-Special Provisions: A3 A72 A192

Sea (IMDG):

- IMDG-Stowage and handling: Category B
- IMDG-Segregation: -
- IMDG-Subsidiary hazards: -
- IMDG-Special Provisions: 163 367
- IMDG-Page: N/A
- IMDG-Label: N/A
- IMDG-MFAG: N/A

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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 (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. 2018/1480 (ATP 13 CLP)

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

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2021/849 (ATP 17 CLP)

Regulation (EU) n. 2022/692 (ATP 18 CLP)

Regulation (EU) n. 2023/707

Regulation (EU) n. 2023/1434 (ATP 19 CLP)

Regulation (EU) n. 2023/1435 (ATP 20 CLP)

Regulation (EU) n. 2024/197 (ATP 21 CLP)

Regulation (EU) n. 2020/878

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: 48, 75

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)
Product belongs to category: P5c	5000	50000

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

German Water Hazard Class.

Class 3: extremely hazardous.

SVHC Substances:
No SVHC substances present in concentration >= 0.1%

Dir. 2010/75/EC (VOC directive) ; Dir. 2004/42/EC (VOC directive)
Total solid content: 23 - 24 %
Volatile Organic compounds - VOCs = 77 %
Volatile Organic compounds - VOCs = 737 g/L
Of which reactive monomers: 0 %
Total Volatile Organic Carbon (typical value): 51 %
Of which reactive monomers: 0 %

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

SECTION 16: Other information

Code	Description
EUH066	Repeated exposure may cause skin dryness or cracking.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
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.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
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
2.6/2	Flam. Liq. 2	Flammable liquid, Category 2
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/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
3.6/2	Carc. 2	Carcinogenicity, Category 2
3.7/2	Repr. 2	Reproductive toxicity, 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/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
Flam. Liq. 2, H225	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method

Repr. 2, H361	Calculation method
STOT SE 3, H336	Calculation method
STOT RE 2, H373	Calculation method
Asp. Tox. 1, H304	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 MSDS 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.

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Paragraphs modified from the previous revision:

- SECTION 9: Physical and chemical properties
- SECTION 16: Other information

Fac-simile label**PU Low Monomer Hardener**

Regulation (EC) No 1272/2008 (CLP):

Hazard pictograms and Signal Word

Danger

Hazard statements

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use CO2, Foam, Chemical powders For extinction.
P403+P235	Store in a well-ventilated place. Keep cool.

Contains

ethyl acetate

toluene

Aromatic polyisocyanate

n-butyl acetate

Hesamethylene diisocyanate, oligomerisation product	May produce an allergic reaction.
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m-tolylidene diisocyanate (Mixture of isomers)	May produce an allergic reaction.
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QUANTITY:**SUPPLIER:**