

(GB)

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 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
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 COSMO PU-205.120

(COSMOPUR 871 Komp. B-Härter)

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

COSMO PU-205.120

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

Relevant identified uses of the substance or mixture:

Adhesive

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

Weiss Chemie + Technik GmbH & Co. KG
 Hansastrasse 2
 35708 Haiger
 Tel: +49 (0) 2773 / 815-0
 msds@weiss-chemie.de
 www.weiss-chemie.de

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (WIC)
 +1 872 5888271 (WIC)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Eye Irrit.	2	H319-Causes serious eye irritation.
STOT SE	3	H335-May cause respiratory irritation.
Skin Irrit.	2	H315-Causes skin irritation.
Resp. Sens.	1	H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens.	1	H317-May cause an allergic skin reaction.
Carc.	2	H351-Suspected of causing cancer.
STOT RE	2	H373-May cause damage to organs through prolonged or repeated exposure by inhalation (respiratory system).

2.2 Label elements

Labeling according to Regulation (EC) 1272/2008 (CLP)



Danger

H319-Causes serious eye irritation. H335-May cause respiratory irritation. H315-Causes skin irritation. H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317-May cause an allergic skin reaction. H351-Suspected of causing cancer. H373-May cause damage to organs through prolonged or repeated exposure by inhalation (respiratory system).

P201-Obtain special instructions before use. P260-Do not breathe vapours or spray. P280-Wear protective gloves / protective clothing / eye protection / face protection. P284-Wear respiratory protection.

P302+P352-IF ON SKIN: Wash with plenty of water / soap. P304+P340-IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313-IF exposed or concerned: Get medical advice / attention.

EUH204-Contains isocyanates. May produce an allergic reaction.

As from 24 August 2023 adequate training is required before industrial or professional use.
 4,4'-methylenediphenyl diisocyanate
 Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate
 Methylenediphenyl diisocyanate, modified

2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
 The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
 The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).

SECTION 3: Composition/information on ingredients

3.1 Substances

n.a.

3.2 Mixtures

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	
Registration number (REACH)	01-2119457015-45-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	905-806-4
CAS	---
content %	5-<25
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Resp. Sens. 1, H334 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373 (respiratory system) (as inhalation)
Specific Concentration Limits and ATE	Skin Irrit. 2, H315: >=5 % Eye Irrit. 2, H319: >=5 % Resp. Sens. 1, H334: >=0,1 % STOT SE 3, H335: >=5 %

Methylenediphenyl diisocyanate, modified	
Registration number (REACH)	01-2119457013-49-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	500-040-3
CAS	25686-28-6
content %	5-<25
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Resp. Sens. 1, H334 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373 (respiratory system) (as inhalation)
Specific Concentration Limits and ATE	Skin Irrit. 2, H315: >=5 % Eye Irrit. 2, H319: >=5 % Resp. Sens. 1, H334: >=0,1 % STOT SE 3, H335: >=5 %

4,4'-methylenediphenyl diisocyanate	
Registration number (REACH)	01-2119457014-47-XXXX
Index	615-005-00-9
EINECS, ELINCS, NLP, REACH-IT List-No.	202-966-0
CAS	101-68-8
content %	5-<15
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373 (respiratory system) (as inhalation)
Specific Concentration Limits and ATE	Skin Irrit. 2, H315: >=5 % Eye Irrit. 2, H319: >=5 % Resp. Sens. 1, H334: >=0,1 % STOT SE 3, H335: >=5 % ATE (as inhalation, Aerosol): 1,5 mg/l/4h

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
 The substances named in this section are given with their actual, appropriate classification!
 For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aiders should ensure they are protected!

Never pour anything into the mouth of an unconscious person!

Inhalation

Remove person from danger area.

Supply person with fresh air and consult doctor according to symptoms.

If the person is unconscious, place in a stable side position and consult a doctor.

Respiratory arrest - Artificial respiration apparatus necessary.

Skin contact

Wipe off residual product carefully with a soft, dry cloth.

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

Dab away with polyethylene glycol 400

Eye contact

Remove contact lenses.

Wash thoroughly for several minutes using copious water - call doctor immediately, have Data Sheet available.

Ingestion

Rinse the mouth thoroughly with water.

Do not induce vomiting - give copious water to drink. Consult doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

The following may occur:

Dermatitis (skin inflammation)

Drying of the skin.

Allergic contact eczema

Discoloration of the skin

Irritant to mucosa of the nose and throat

Coughing

Headaches

Effect on the central nervous system

Asthmatic symptoms

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In case of sensitivity, concentrations below the limit value may already result in asthmatic symptoms.
 Respiratory distress
 In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.
4.3 Indication of any immediate medical attention and special treatment needed
 In case of irritation of the lungs, perform first-aid with controlled-dosage aerosol dexamethasone.
 Pulmonary oedema prophylaxis
 Medical supervision necessary due to possibility of delayed reaction.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

CO2
 Extinction powder
 Foam
 Water jet spray

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Oxides of carbon
 Oxides of nitrogen
 Isocyanates
 Hydrocyanic acid (hydrogen cyanide)
 Toxic gases

Danger of bursting (explosion) when heated

5.3 Advice for firefighters

For personal protective equipment see Section 8.
 In case of fire and/or explosion do not breathe fumes.
 Protective respirator with independent air supply.
 According to size of fire
 Full protection, if necessary.
 Cool container at risk with water.
 Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
 Ensure sufficient ventilation, remove sources of ignition.
 Avoid dust formation with solid or powder products.
 Leave the danger zone if possible, use existing emergency plans if necessary.
 Ensure sufficient supply of air.
 Avoid inhalation, and contact with eyes or skin.
 If applicable, caution - risk of slipping.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

6.2 Environmental precautions

If leakage occurs, dam up.
 Resolve leaks if this possible without risk.
 Prevent surface and ground-water infiltration, as well as ground penetration.
 Prevent from entering drainage system.
 If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth, sawdust) and dispose of according to Section 13.
 Allow to stand for a few days in an unclosed container until reaction no longer occurs.
 Keep moist.
 Do not close packing drum.
 CO2 formation in closed tanks causes pressure to rise.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
 Avoid inhalation of the vapours.
 If applicable, suction measures at the workstation or on the processing machine necessary.
 Avoid contact with eyes or skin.
 No contact with products of this type in case of allergies, asthma and chronic respiratory tract disorders.
 Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
 Observe directions on label and instructions for use.
 Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
 Wash hands before breaks and at end of work.
 Keep away from food, drink and animal feedingsuffs.
 Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
 Not to be stored in gangways or stair wells.
 Store product closed and only in original packing.
 Keep protected from direct sunlight and temperatures over 50°C.
 Only store at temperatures from 15°C to 25°C.
 Store in a dry place.

7.3 Specific end use(s)

Adhesive

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Chemical Name	Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Content %:5-<25
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WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as -NCO))	WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as -NCO))	---
Monitoring procedures: ---		
BMGV: 1 µmol isocyanate-derived diamine/mol creatinine in urine (At the end of the period of exposure)	Other information: Sen (Isocyanates, all (as -NCO))	

Chemical Name	Methylenediphenyl diisocyanate, modified	Content %:5-<25
WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as -NCO))	WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as -NCO))	---
Monitoring procedures:	ISO 16702 (Workplace air quality – determination of total isocyanate groups in air using 2-(1-methoxyphenyl)piperazine and liquid chromatography) - 2007 MDHS 25/4 (Organic isocyanates in air – Laboratory method using sampling either onto 2-(1-methoxyphenyl)piperazine coated glass fibre filters followed by solvent desorption or into impingers and analysis using high performance liquid chromatography) - 2015	
BMGV: 1 µmol isocyanate-derived diamine/mol creatinine in urine (At the end of the period of exposure)	Other information: ---	

Chemical Name	4,4'-methylenediphenyl diisocyanate	Content %:5-<15
WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as -NCO))	WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as -NCO))	---
Monitoring procedures:	ISO 16702 (Workplace air quality – determination of total isocyanate groups in air using 2-(1-methoxyphenyl)piperazine and liquid chromatography) - 2007 MDHS 25/4 (Organic isocyanates in air – Laboratory method using sampling either onto 2-(1-methoxyphenyl)piperazine coated glass fibre filters followed by solvent desorption or into impingers and analysis using high performance liquid chromatography) - 2015 - EU project BC/CEN/ENTR/000/2002-16 card 7-4 (2004) - NIOSH 5521 (ISOCYANATES, MONOMERIC) - 1994 - NIOSH 5522 (ISOCYANATES) - 1998 - NIOSH 5525 (ISOCYANATES, TOTAL (MAP)) - 2003 - OSHA 18 (Diisocyanates 2,4-TDI and MDI) - 1980 - OSHA 47 (Methylene Bisphenyl Isocyanate (MDI)) - 1984	
BMGV: 1 µmol isocyanate-derived diamine/mol creatinine in urine (At the end of the period of exposure)	Other information: Sen (Isocyanates, all (as -NCO))	

Chemical Name	Silica, amorphous	Content %:
WEL-TWA: 6 mg/m3 (total inh. dust), 2,4 mg/m3 (resp. dust)	WEL-STEL: ---	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	1	mg/l	
	Environment - marine		PNEC	0,1	mg/l	
	Environment - soil		PNEC	1	mg/kg	
	Environment - sewage treatment plant		PNEC	1	mg/l	

4,4'-methylenediphenyl diisocyanate						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	1	mg/l	
	Environment - marine		PNEC	0,1	mg/l	
	Environment - sewage treatment plant		PNEC	1	mg/l	
	Environment - soil		PNEC	1	mg/kg dw	
	Environment - sporadic (intermittent) release		PNEC	10	mg/l	
Consumer	Human - oral	Short term, systemic effects	DNEL	20	mg/kg bw/day	
Consumer	Human - dermal	Short term, local effects	DNEL	17,2	mg/cm ²	
Consumer	Human - dermal	Short term, systemic effects	DNEL	25	mg/kg bw/day	
Consumer	Human - inhalation	Short term, local effects	DNEL	0,05	mg/m ³	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	0,05	mg/m ³	
Consumer	Human - inhalation	Long term, local effects	DNEL	0,025	mg/m ³	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	0,025	mg/m ³	
Workers / employees	Human - dermal	Short term, local effects	DNEL	28,7	mg/cm ²	
Workers / employees	Human - dermal	Short term, systemic effects	DNEL	50	mg/kg bw/day	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	0,1	mg/m ³	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	0,1	mg/m ³	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	0,05	mg/m ³	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	0,05	mg/m ³	

Aluminium hydroxide						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Human - inhalation	Long term, local effects	DNEL	10,76	mg/m ³	
	Human - inhalation	Long term, systemic effects	DNEL	10,76	mg/m ³	
Consumer	Human - oral	Short term, systemic effects	DNEL	4,74	mg/kg bw/d	

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Zeolites						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	3,2	mg/l	
	Environment - marine		PNEC	0,32	mg/l	
	Environment - sewage treatment plant		PNEC	95	mg/l	
	Environment - soil		PNEC	600	mg/kg dw	
Consumer	Human - oral	Long term, systemic effects	DNEL	1,25	mg/kg body weight/day	
Consumer	Human - dermal	Long term, systemic effects	DNEL	1,25	mg/kg body weight/day	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	2,5	mg/kg body weight/day	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	3	mg/m3	

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WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany). (8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).

(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage. ** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE). (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction. If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.

Applies only if maximum permissible exposure values are listed here. Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. EN 14042. EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable. Wash hands before breaks and at end of work. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:
Chemical resistant protective gloves (EN ISO 374). Recommended Protective nitrile gloves (EN ISO 374). Minimum layer thickness in mm:
>= 0,35
Permeation time (penetration time) in minutes:
>= 480
The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.
The recommended maximum wearing time is 50% of breakthrough time.
Protective hand cream recommended.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
Normally not necessary.
If OES or MEL is exceeded.
Filter A2 P2 (EN 14387), code colour brown, white
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable

Additional information on hand protection - No tests have been performed. In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents. Selection of materials derived from glove manufacturer's indications. Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account. Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer. In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use. The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state: Paste, liquid. (DIN ISO 2137)
 Colour: Beige
 Odour: Characteristic
 Melting point/freezing point: There is no information available on this parameter.
 Boiling point or initial boiling point and boiling range: There is no information available on this parameter.
 Flammability: There is no information available on this parameter.
 Lower explosion limit: There is no information available on this parameter.
 Upper explosion limit: There is no information available on this parameter.
 Flash point: There is no information available on this parameter.
 Auto-ignition temperature: There is no information available on this parameter.
 Decomposition temperature: There is no information available on this parameter.
 pH: Mixture reacts with water.
 Kinematic viscosity: There is no information available on this parameter.
 Solubility: Insoluble
 Partition coefficient n-octanol/water (log value): Does not apply to mixtures.
 Vapour pressure: There is no information available on this parameter.
 Density and/or relative density: 1,55 g/cm3 (relative density)
 Relative vapour density: There is no information available on this parameter.
 Particle characteristics: Does not apply to liquids.

9.2 Other information

Explosives: Product is not explosive.
 Oxidising liquids: No

SECTION 10: Stability and reactivity

10.1 Reactivity

reacts with water

10.2 Chemical stability

Stable with proper storage and handling.

10.3 Possibility of hazardous reactions

Exothermic reaction possible with:

Alcohols
 Amines
 Bases
 Acids
 Water
 Development of:
 Carbon dioxide
 CO2 formation in closed tanks causes pressure to rise.
 Pressure increase will result in danger of bursting.

10.4 Conditions to avoid

Protect from humidity.
 Polymerisation due to high heat is possible.
 T > ~ 260°C

10.5 Incompatible materials

Acids
 Bases
 Amines
 Alcohols
 Water

10.6 Hazardous decomposition products

No decomposition when used as directed.

SECTION 11: Toxicological information

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

Possibly more information on health effects, see Section 2.1 (classification).

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:	ATE	>20	mg/l/4h			calculated value, Vapours
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	> 10000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	> 9400	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	0,49	mg/l/4h	Rat		Mist, Dust, Does not conform with EU classification.
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Irritant

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Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Yes (inhalation and skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	Regulation (EC) 440/2008 B.13/B.14 (REVERSE MUTATION TEST USING BACTERIA)	Negative
Germ cell mutagenicity:				Rat	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Carcinogenicity:				Rat	OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Carc. 2

Methylenediphenyl diisocyanate, modified						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	Analogous conclusion
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Skin Irrit. 2
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Respiratory or skin sensitisation:				Mouse		Yes (inhalation)
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Yes (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	Regulation (EC) 440/2008 B.13/B.14 (REVERSE MUTATION TEST USING BACTERIA)	Negative
Germ cell mutagenicity:				Rat	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOEC	0,2	mg/m ³	Rat	OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	

4,4'-methylenediphenyl diisocyanate						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat	Regulation (EC) 440/2008 B.1 (ACUTE ORAL TOXICITY)	Analogous conclusion
Acute toxicity, by dermal route:	LD50	>9400	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	Analogous conclusion
Acute toxicity, by inhalation:	LC50	0,368	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol, Does not conform with EU classification.
Acute toxicity, by inhalation:	ATE	1,5	mg/l/4h			Aerosol, Expert judgement.
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Skin Irrit. 2, Analogous conclusion
Respiratory or skin sensitisation:				Guinea pig		Yes (inhalation)
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	Skin Sens. 1
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative, Analogous conclusion
Germ cell mutagenicity:				Rat	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Germ cell mutagenicity:				Rat	OECD 489 (In Vivo Mammalian Alkaline Comet Assay)	Negative
Carcinogenicity:				Rat	OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Aerosol, Analogous conclusion, Carc. 2

Reproductive toxicity:	NOAEL	4-12	mg/m ³	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Aerosol, Analogous conclusion
Specific target organ toxicity - single exposure (STOT-SE), inhalative:						May cause respiratory irritation.
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	LOAEL	1	mg/m ³	Rat	OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Aerosol, Analogous conclusion, Target organ(s): respiratory system
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	0,2	mg/m ³	Rat	OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Aerosol, Analogous conclusion, Target organ(s): respiratory system

Silica, amorphous						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 423 (Acute Oral Toxicity - Acute Toxic Class Method)	
Acute toxicity, by dermal route:	LD50	> 2000	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Aspiration hazard:						No

11.2. Information on other hazards

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Endocrine disrupting properties:						Does not apply to mixtures.
Other information:						No other relevant information available on adverse effects on health.

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

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Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							With water at the interface, transforms slowly with formation of CO ₂ into a firm, insoluble reaction product with a high melting point (polycarbamide). According to experience available to date, polycarbamide is inert and non-degradable.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment:							n.d.a.
12.6. Endocrine disrupting properties:							Does not apply to mixtures.

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12.7. Other adverse effects:							No information available on other adverse effects on the environment.
Other information:							DOC-elimination degree (complexing organic substance) \geq 80%/28d: No

Reaction mass of 4,4'-methylenebis(phenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:		28d	0	%	activated sludge	OECD 302 C (Inherent Biodegradability - Modified MITI Test (II))	
12.3. Bioaccumulative potential:	BCF		200				Not to be expected
12.1. Toxicity to fish:	LC50	96h	>1000	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	NOEC/N OEL	21d	>10	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to daphnia:	EC50	24h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
Toxicity to bacteria:	EC50	3h	>1000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

Methylenebis(phenyl diisocyanate, modified							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:		28d	0	%	activated sludge	OECD 302 C (Inherent Biodegradability - Modified MITI Test (II))	
12.3. Bioaccumulative potential:	BCF		200			OECD 305 (Bioconcentration - Flow-Through Fish Test)	Not to be expected
12.1. Toxicity to fish:	LC50	96h	>1000	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	NOEC/N OEL	21d	\geq 10	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
Toxicity to bacteria:	EC50	3h	>1000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

4,4'-methylenebis(phenyl diisocyanate							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes

Other information:							According to experience available to date, polycarbamide is inert and non-degradable. With water at the interface, transforms slowly with formation of CO ₂ into a firm, insoluble reaction product with a high melting point (polycarbamide).
12.4. Mobility in soil:	H (Henry)		0.0229	Pa*m ³ /mol			
12.1. Toxicity to fish:	LC50	96h	>1000	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	Analogous conclusion
12.2. Persistence and degradability:		28d	0	%		OECD 302 C (Inherent Biodegradability - Modified MITI Test (II))	Not biodegradable. With water at the interface, transforms slowly with formation of CO ₂ into a firm, insoluble reaction product with a high melting point (polycarbamide). According to experience available to date, polycarbamide is inert and non-degradable. Analogous conclusion
12.1. Toxicity to daphnia:	EC50	24h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	Analogous conclusion
12.1. Toxicity to daphnia:	NOEC/N OEL	21d	>10	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	Analogous conclusion
12.3. Bioaccumulative potential:	Log Pow		5,22				A notable biological accumulation potential has to be expected (LogPow > 3).
12.1. Toxicity to algae:	ErC50	72h	>1640	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	Analogous conclusion
12.3. Bioaccumulative potential:	BCF	28d	200		Cyprinus caprio	IUCLID Chem. Data Sheet (ESIS)	Not to be expected
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Other information:	AOX						Does not contain any organically bound halogens which can contribute to the AOX value in waste water.
Toxicity to bacteria:	EC50	3h	>1000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	Analogous conclusion

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Other organisms:	NOEC/N OEL	14d	>10 00	mg/kg	Lactuca sativa	OECD 208 (Terrestrial Plants, Growth Test)	Analogous conclusion
Other organisms:	NOEC/N OEL	14d	>10 00	mg/kg	Avena sativa	OECD 208 (Terrestrial Plants, Growth Test)	Analogous conclusion
Toxicity to annelids:	NOEC/N OEL	14d	> 100 0	mg/kg	Lumbricus terrestris	OECD 207 (Earthworm, Acute Toxicity Tests)	Analogous conclusion
Toxicity to annelids:	EC50	14d	>10 00	mg/kg	Eisenia foetida	OECD 207 (Earthworm, Acute Toxicity Tests)	Analogous conclusion

Silica, amorphous

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	EC0	96h	>10 000	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC0	24h	>10 00	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	ErC50	72h	>=1 000 0	mg/l	Scenedesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:							Inorganic products cannot be eliminated from water through biological purification methods.
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

SECTION 13: Disposal considerations**13.1 Waste treatment methods****For the substance / mixture / residual amounts**

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product.

Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)

08 04 09 waste adhesives and sealants containing organic solvents or other hazardous substances

08 05 01 waste isocyanates

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

E.g. suitable incineration plant.

Hardened product:

E.g. dispose at suitable refuse site.

For contaminated packing material

Pay attention to local and national official regulations.

Empty container completely.

Uncontaminated packaging can be recycled.

Dispose of packaging that cannot be cleaned in the same manner as the substance.

15 01 10 packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information**General statements**

14.1. UN number or ID number: n.a.

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:

14.3. Transport hazard class(es): n.a.

14.4. Packing group: n.a.

Classification code: n.a.

LQ: n.a.

14.5. Environmental hazards: Not applicable

Tunnel restriction code:

Transport by sea (IMDG-code)

14.2. UN proper shipping name:

14.3. Transport hazard class(es): n.a.

14.4. Packing group: n.a.

Marine Pollutant: n.a.

14.5. Environmental hazards: Not applicable

Transport by air (IATA)

14.2. UN proper shipping name:

14.3. Transport hazard class(es): n.a.

14.4. Packing group: n.a.

14.5. Environmental hazards: Not applicable

14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Maritime transport in bulk according to IMO instruments

Non-dangerous material according to Transport Regulations.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Observe restrictions:

Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!

Regulation (EC) No 1907/2006, Annex XVII

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate

Methylenediphenyl diisocyanate, modified

4,4'-methylenediphenyl diisocyanate

Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!

Comply with trade association/occupational health regulations.

Directive 2010/75/EU (VOC): 0,39 %

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 1-16

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Eye Irrit. 2, H319	Classification according to calculation procedure.
STOT SE 3, H335	Classification according to calculation procedure.
Skin Irrit. 2, H315	Classification according to calculation procedure.
Resp. Sens. 1, H334	Classification according to calculation procedure.
Skin Sens. 1, H317	Classification according to calculation procedure.
Carc. 2, H351	Classification according to calculation procedure.
STOT RE 2, H373	Classification according to calculation procedure.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product

and the constituents (specified in Sections 2 and 3).

H373 May cause damage to organs through prolonged or repeated exposure by inhalation.

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.

Eye Irrit. — Eye irritation

STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation

Skin Irrit. — Skin irritation

Resp. Sens. — Respiratory sensitization

Skin Sens. — Skin sensitization

Carc. — Carcinogenicity

STOT RE — Specific target organ toxicity - repeated exposure

Acute Tox. — Acute toxicity - inhalation

Key literature references and sources**For data:**

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.

Guidelines for the preparation of safety data sheets as amended (ECHA).

Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).

Safety data sheets for the constituent substances.

ECHA Homepage - Information about chemicals.

GESTIS Substance Database (Germany).

German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).

EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.

National Lists of Occupational Exposure Limits for each country as amended.

Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

Any abbreviations and acronyms used in this document:

acc., acc. to according, according to

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (=

European Agreement concerning the International Carriage of Dangerous Goods by Road)

AOX Adsorbable organic halogen compounds

approx. approximately

Art., Art. no. Article number

ASTM ASTM International (American Society for Testing and Materials)

ATE Acute Toxicity Estimate

BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and

Testing, Germany)

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health

and Safety, Germany)

BCF Bioconcentration factor

BSEF The International Bromine Council

bw body weight

CAS Chemical Abstracts Service

CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification,

labelling and packaging of substances and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

DMEL Derived Minimum Effect Level

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DNEL Derived No Effect Level
 DOC Dissolved organic carbon
 dw dry weight
 e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
 EbCx, EyCx, Eblx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)
 EC European Community
 ECHA European Chemicals Agency
 ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect
 EEC European Economic Community
 EINECS European Inventory of Existing Commercial Chemical Substances
 ELINCS European List of Notified Chemical Substances
 EN European Norms
 EPA United States Environmental Protection Agency (United States of America)
 ErCx, EuCx, Erlx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)
 etc. et cetera
 EU European Union
 EVAL Ethylene-vinyl alcohol copolymer
 Fax. Fax number
 gen. general
 GHS Globally Harmonized System of Classification and Labelling of Chemicals
 GWP Global warming potential
 Koc Adsorption coefficient of organic carbon in the soil
 Kow octanol-water partition coefficient
 IARC International Agency for Research on Cancer
 IATA International Air Transport Association
 IBC (Code) International Bulk Chemical (Code)
 IMDG-code International Maritime Code for Dangerous Goods
 incl. including, inclusive
 IUCLID International Uniform Chemical Information Database
 IUPAC International Union for Pure Applied Chemistry
 LC50 Lethal Concentration to 50 % of a test population
 LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)
 Log Koc Logarithm of adsorption coefficient of organic carbon in the soil
 Log Kow, Log Pow Logarithm of octanol-water partition coefficient
 LQ Limited Quantities
 MARPOL International Convention for the Prevention of Marine Pollution from Ships
 n.a. not applicable
 n.av. not available
 n.c. not checked
 n.d.a. no data available
 NIOSH National Institute for Occupational Safety and Health (USA)
 NLP No-longer-Polymer
 NOEC, NOEL No Observed Effect Concentration/Level
 OECD Organisation for Economic Co-operation and Development
 org. organic
 OSHA Occupational Safety and Health Administration (USA)
 PBT persistent, bioaccumulative and toxic
 PE Polyethylene
 PNEC Predicted No Effect Concentration
 ppm parts per million
 PVC Polyvinylchloride
 REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
 REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
 RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
 SVHC Substances of Very High Concern
 Tel. Telephone
 TOC Total organic carbon
 UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
 VOC Volatile organic compounds
 vPvB very persistent and very bioaccumulative
 wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are

not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.

No responsibility.

These statements were made by:

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