

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## MULTI-PURPOSE HIGH STRENGTH ADHESIVE - 310 ML / 470 G

Version	Revision Date:	SDS Number:	Date of last issue: 18.12.2020
12.0	08.10.2021	609193-00011	Date of first issue: 11.06.2010

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

#### 1.1 Product identifier

Trade name : MULTI-PURPOSE HIGH STRENGTH ADHESIVE - 310 ML / 470 G

Product code : 0893100110

Unique Formula Identifier (UFI) : 4Q88-H0J2-000Q-P6T5

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

Use of the Sub-stance/Mixture : Adhesives  
Professional use product

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

Company : Adolf Wuerth GmbH & Co. KG  
Reinhold-Würth-Str. 12-17  
74653 Künzelsau

Telephone : +49 794015 0

Telefax : +49 794015 10 00

E-mail address of person responsible for the SDS : prodsafe@wuerth.com

#### 1.4 Emergency telephone number

+49 (0)6132 – 84463

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Respiratory sensitisation, Category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Skin irritation, Category 2	H315: Causes skin irritation.

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Specific target organ toxicity - single exposure, Category 3

H335: May cause respiratory irritation.

Eye irritation, Category 2

H319: Causes serious eye irritation.

### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure.
Precautionary statements	:	<b>Prevention:</b> P201 Obtain special instructions before use. P260 Do not breathe vapours. P264 Wash skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. <b>Response:</b> P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. P308 + P313 IF exposed or concerned: Get medical advice/ attention.

#### Hazardous components which must be listed on the label:

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

#### Additional Labelling

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

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### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
4,4'-Methylenediphenyl diisocyanate, oligomers	25686-28-6 500-040-3 01-2119457013-49	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 Tract)  specific concentration limit STOT SE 3; H335 >= 5 % Resp. Sens. 1; H334 >= 0,1 %  Acute toxicity estimate  Acute inhalation toxicity (dust/mist): 1,5 mg/l	>= 5 - < 10
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl	Not Assigned 247-714-0 615-005-00-9	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 5 - < 10

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isocyanate	01-2119457015-45	Resp. Sens. 1; H334 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 STOT RE 2; H373 (Respiratory Tract)  specific concentration limit Eye Irrit. 2; H319 >= 5 % STOT SE 3; H335 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 %	
4,4'-Diphenylmethane diisocyanate	101-68-8 202-966-0 615-005-00-9 01-2119457014-47	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 Tract)  specific concentration limit Eye Irrit. 2; H319 >= 5 % STOT SE 3; H335 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 %	>= 5 - < 10
Propylene carbonate	108-32-7 203-572-1 607-194-00-1 01-2119537232-48	Eye Irrit. 2; H319	>= 1 - < 10
Dibutyltin dilaurate	77-58-7 201-039-8 050-030-00-3 01-2119496068-27	Acute Tox. 2; H330 Skin Corr. 1; H314 Eye Dam. 1; H318 Muta. 2; H341 Repr. 1B; H360FD STOT SE 1; H370 (thymus gland) STOT RE 1; H372 (thymus gland) Aquatic Acute 1;	>= 0,1 - < 0,25

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		H400 Aquatic Chronic 1; H410 EUH071	
		M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	
		Acute toxicity esti- mate	
		Acute inhalation tox- icity (dust/mist): 0,075 mg/l	

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- If inhaled : If inhaled, remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Get medical attention.
- If swallowed : If swallowed, DO NOT induce vomiting.

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Get medical attention.  
Rinse mouth thoroughly with water.

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

Risks : Respiratory symptoms, including pulmonary edema, may be delayed.  
Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.  
Suspected of causing cancer.  
May cause damage to organs through prolonged or repeated exposure.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical  
Water spray in large fire situations

Unsuitable extinguishing media : High volume water jet

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

Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.  
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.

Hazardous combustion products : Silicon oxides  
Carbon oxides  
Metal oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Hydrogen cyanide (hydrocyanic acid)  
Isocyanates

### 5.3 Advice for firefighters

Special protective equipment : In the event of fire, wear self-contained breathing apparatus.

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for firefighters Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

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### SECTION 6: Accidental release measures

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

Personal precautions : Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

#### 6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

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

Methods for cleaning up : Soak up with inert absorbent material.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
After approximately one hour, transfer to waste container and do not seal, due to evolution of carbon dioxide.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

#### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

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### CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.  
Do not breathe vapours.  
Do not swallow.  
Do not get in eyes.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Keep container tightly closed.  
Keep away from water.  
Protect from moisture.  
Already sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers.  
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace.  
Wash contaminated clothing before re-use.

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

Requirements for storage areas and containers : Keep in properly labelled containers. Store locked up. Protect from moisture. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations.

Advice on common storage : Do not store with the following product types:  
Strong oxidizing agents  
Organic peroxides  
Explosives  
Gases

Storage class (TRGS 510) : 10, Combustible liquids

Recommended storage temperature : 15 - 25 °C

### 7.3 Specific end use(s)

Specific use(s) : No data available



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### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Not Assigned	AGW (Vapour and aerosols)	0,05 mg/m <sup>3</sup>	TRGS 430
	Peak-limit: excursion factor (category): 1;=2=(I)			
	Further information: In well-founded cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., airway sensitizing substance			
4,4'-Diphenylmethane diisocyanate	101-68-8	AGW (Vapour and aerosols)	0,05 mg/m <sup>3</sup>	TRGS 430
	Peak-limit: excursion factor (category): 1;=2=(I)			
	Further information: In well-founded cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., airway sensitizing substance			
		AGW (Vapour and aerosols, inhalable fraction)	0,05 mg/m <sup>3</sup>	DE TRGS 900
	Peak-limit: excursion factor (category): 1;=2=(I)			
	Further information: In well-founded cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child, Substance sensitizing through the skin and respiratory system			
Propylene carbonate	108-32-7	AGW (Vapour and aerosols)	2 ppm 8,5 mg/m <sup>3</sup>	DE TRGS 900
	Peak-limit: excursion factor (category): 1;(I)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
Dimethyl siloxane reaction with silica	67762-90-7	AGW (Inhalable fraction)	4 mg/m <sup>3</sup> (Silica)	DE TRGS 900
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
Dibutyltin dilaurate	77-58-7	AGW (Vapour and aerosols)	0,0018 ppm 0,009 mg/m <sup>3</sup> (Tin)	DE TRGS 900
	Peak-limit: excursion factor (category): 1;(I)			
	Further information: Skin absorption, When there is compliance with the OEL			

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and biological tolerance values, harm to the unborn child can not be excluded

### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value	
Propylene carbonate	Workers	Inhalation	Long-term systemic effects	70,53 mg/m <sup>3</sup>	
	Workers	Inhalation	Long-term local effects	20 mg/m <sup>3</sup>	
	Workers	Skin contact	Long-term systemic effects	20 mg/kg bw/day	
	Workers	Skin contact	Long-term local effects	10 mg/cm <sup>2</sup>	
	Consumers	Inhalation	Long-term systemic effects	17,4 mg/m <sup>3</sup>	
	Consumers	Inhalation	Long-term local effects	10 mg/m <sup>3</sup>	
	Consumers	Skin contact	Long-term systemic effects	10 mg/kg bw/day	
	Consumers	Ingestion	Long-term systemic effects	10 mg/kg bw/day	
	Polypropylene glycol	Workers	Inhalation	Long-term local effects	10 mg/m <sup>3</sup>
		Workers	Skin contact	Long-term systemic effects	84 mg/kg bw/day
Consumers		Inhalation	Long-term local effects	10 mg/m <sup>3</sup>	
Consumers		Skin contact	Long-term systemic effects	51 mg/kg bw/day	
Consumers		Ingestion	Long-term systemic effects	24 mg/kg bw/day	
4,4'-Methylenediphenyl diisocyanate, oligomers		Workers	Inhalation	Long-term systemic effects	0,05 mg/m <sup>3</sup>
	Workers	Inhalation	Acute systemic effects	0,1 mg/m <sup>3</sup>	
	Workers	Inhalation	Long-term local effects	0,05 mg/m <sup>3</sup>	
	Workers	Inhalation	Acute local effects	0,1 mg/m <sup>3</sup>	
	Workers	Skin contact	Acute systemic effects	50 mg/kg bw/day	
	Workers	Skin contact	Acute local effects	28,7 mg/kg bw/day	
	Consumers	Inhalation	Long-term systemic effects	0,025 mg/m <sup>3</sup>	
	Consumers	Inhalation	Acute systemic effects	0,05 mg/m <sup>3</sup>	
	Consumers	Inhalation	Long-term local effects	0,025 mg/m <sup>3</sup>	
	Consumers	Inhalation	Acute local effects	0,05 mg/m <sup>3</sup>	

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	Consumers	Skin contact	Acute systemic effects	25 mg/kg bw/day
	Consumers	Skin contact	Acute local effects	17,2 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	20 mg/kg bw/day
Dibutyltin dilaurate	Workers	Inhalation	Long-term systemic effects	0,02 mg/m <sup>3</sup>
	Workers	Inhalation	Acute systemic effects	0,059 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	0,43 mg/kg bw/day
	Workers	Skin contact	Acute systemic effects	2,08 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,005 mg/m <sup>3</sup>
	Consumers	Inhalation	Acute systemic effects	0,04 mg/m <sup>3</sup>
	Consumers	Skin contact	Long-term systemic effects	0,16 mg/kg bw/day
	Consumers	Skin contact	Acute systemic effects	0,5 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	0,003 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	0,02 mg/kg bw/day
4,4'-Diphenylmethane diisocyanate	Workers	Inhalation	Long-term local effects	0,05 mg/m <sup>3</sup>
	Workers	Inhalation	Acute local effects	0,1 mg/m <sup>3</sup>
	Consumers	Inhalation	Long-term local effects	0,025 mg/m <sup>3</sup>
	Consumers	Inhalation	Acute local effects	0,05 mg/m <sup>3</sup>
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Workers	Inhalation	Long-term systemic effects	0,05 mg/m <sup>3</sup>
	Workers	Inhalation	Acute systemic effects	0,1 mg/m <sup>3</sup>
	Workers	Inhalation	Long-term local effects	0,05 mg/m <sup>3</sup>
	Workers	Inhalation	Acute local effects	0,1 mg/m <sup>3</sup>
	Workers	Skin contact	Acute systemic effects	50 mg/kg bw/day
	Workers	Skin contact	Acute local effects	28,7 mg/cm <sup>2</sup>
	Consumers	Inhalation	Long-term systemic effects	0,025 mg/m <sup>3</sup>
	Consumers	Inhalation	Acute systemic effects	0,05 mg/m <sup>3</sup>
	Consumers	Inhalation	Long-term local effects	0,025 mg/m <sup>3</sup>

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	Consumers	Inhalation	Acute local effects	0,05 mg/m <sup>3</sup>
	Consumers	Skin contact	Acute systemic effects	25 mg/kg
	Consumers	Skin contact	Acute local effects	17,2 mg/kg
	Consumers	Ingestion	Acute systemic effects	20 mg/kg

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Propylene carbonate	Fresh water	0,9 mg/l
	Freshwater - intermittent	9 mg/l
	Marine water	0,09 mg/l
	Marine water - intermittent	0,9 mg/l
	Sewage treatment plant	7400 mg/l
Polypropylene glycol	Soil	0,81 mg/kg dry weight (d.w.)
	Fresh water	0,1 mg/l
	Marine water	0,01 mg/l
	Intermittent use/release	1 mg/l
	Sewage treatment plant	100 mg/l
4,4'-Methylenediphenyl diisocyanate, oligomers	Fresh water sediment	0,765 mg/kg
	Marine sediment	0,0765 mg/kg
	Soil	0,109 mg/kg
	Fresh water	1 mg/l
	Marine water	0,1 mg/l
Dibutyltin dilaurate	Intermittent use/release	10 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg
	Fresh water	0,000463 mg/l
	Freshwater - intermittent	0,00463 mg/l
4,4'-Diphenylmethane diisocyanate	Marine water	0,0463 µg/l
	Marine water - intermittent	0,005 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	0,05 mg/kg dry weight (d.w.)
	Marine sediment	0,005 mg/kg dry weight (d.w.)
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Soil	0,0407 mg/kg dry weight (d.w.)
	Oral (Secondary Poisoning)	0,2 mg/kg food
	Fresh water	1 mg/l
	Marine water	0,1 mg/l
	Intermittent use/release	10 mg/l
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Fresh water	1 mg/l

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nate		
	Marine water	0,1 mg/l
	Intermittent use/release	10 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg

### 8.2 Exposure controls

#### Engineering measures

Processing may form hazardous compounds (see section 10).

Minimize workplace exposure concentrations.

If sufficient ventilation is unavailable, use with local exhaust ventilation.

#### Personal protective equipment

Eye protection : Wear the following personal protective equipment:  
Safety goggles  
Equipment should conform to DIN EN 166

Hand protection

Material : Nitrile rubber  
Break through time :  $\geq 480$  min  
Glove thickness :  $\geq 0,35$  mm  
Directive : Equipment should conform to DIN EN 374  
Wearing time : 240 min

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.  
Equipment should conform to DIN EN 14387

Filter type : Combined particulates and organic vapour type (A-P)

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : paste

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Colour	:	coloured
Odour	:	characteristic
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	> 260 °C
pH	:	Solvent mixture; pH value determination not possible, no aqueous solution
Viscosity		
Viscosity, dynamic	:	67.000 - 93.000 mPa.s (25 °C)
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Not applicable
Vapour pressure	:	No data available
Density	:	ca. 1,52 g/cm <sup>3</sup> (20 °C)
Relative vapour density	:	No data available
Particle characteristics		
Particle size	:	Not applicable

### 9.2 Other information

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Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Evaporation rate : No data available

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

Not classified as a reactivity hazard.

#### 10.2 Chemical stability

Stable if used as directed. Follow precautionary advice and avoid incompatible materials and conditions.

Polymerises at high temperatures with evolution of carbon dioxide.

#### 10.3 Possibility of hazardous reactions

Hazardous reactions : Isocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the isocyanate. Exothermic reaction with acids, amines and alcohols  
Reacts with water to form carbon dioxide and heat  
Isocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea.  
Hazardous decomposition products will be formed upon contact with water or humid air.

#### 10.4 Conditions to avoid

Conditions to avoid : Exposure to moisture

#### 10.5 Incompatible materials

Materials to avoid : Oxidizing agents  
Acids  
Bases  
Water  
Alcohols  
Amines  
Ammonia  
Aluminium  
Zinc  
Brass  
Tin  
Copper  
Galvanised metals  
Humid air

#### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

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### SECTION 11: Toxicological information

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

Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

##### Acute toxicity

Not classified based on available information.

##### Product:

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Calculation method

##### Components:

##### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg  
Method: OECD Test Guideline 425  
Remarks: Based on data from similar materials

Acute inhalation toxicity : Acute toxicity estimate: 1,5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Expert judgement  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 9.400 mg/kg  
Remarks: Based on data from similar materials

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

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): 0,49 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 9.400 mg/kg  
Remarks: Based on data from similar materials

##### **4,4'-Diphenylmethane diisocyanate:**

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg



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Assessment: The substance or mixture has no acute oral toxicity

Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 2,24 mg/l  
Exposure time: 1 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg  
Remarks: Based on data from similar materials

### **Propylene carbonate:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg  
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

### **Dibutyltin dilaurate:**

Acute oral toxicity : LD50 (Rat): 2.071 mg/kg

Acute inhalation toxicity : LC50 (Mouse): 0,075 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: Corrosive to the respiratory tract.

Acute toxicity estimate: 0,075 mg/l

Test atmosphere: dust/mist

Method: Calculation method

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg  
Method: OECD Test Guideline 402

### **Skin corrosion/irritation**

Causes skin irritation.

### **Components:**

#### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation  
Remarks : Based on data from similar materials

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

Species : Rabbit

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Method : OECD Test Guideline 404  
Result : Skin irritation

### 4,4'-Diphenylmethane diisocyanate:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation  
Remarks : Based on data from similar materials

### Propylene carbonate:

Species : Rabbit  
Result : No skin irritation

### Dibutyltin dilaurate:

Species : Rabbit  
Result : Corrosive after 4 hours or less of exposure

### Serious eye damage/eye irritation

Causes serious eye irritation.

### Components:

#### 4,4'-Methylenediphenyl diisocyanate, oligomers:

Result : Irritation to eyes, reversing within 7 days  
Remarks : Based on data from similar materials

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

Result : Irritation to eyes, reversing within 21 days  
Remarks : Based on harmonised classification in EU regulation 1272/2008, Annex VI

#### 4,4'-Diphenylmethane diisocyanate:

Result : Irritation to eyes, reversing within 7 days  
Remarks : Based on harmonised classification in EU regulation 1272/2008, Annex VI

### Propylene carbonate:

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : Irritation to eyes, reversing within 21 days

### Dibutyltin dilaurate:

Result : Irreversible effects on the eye  
Remarks : Based on skin corrosivity.

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### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

#### Respiratory sensitisation

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

#### Components:

##### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Test Type	: Maximisation Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: positive
Remarks	: Based on data from similar materials
Assessment	: Probability or evidence of skin sensitisation in humans
Exposure routes	: Inhalation
Species	: Rat
Result	: positive
Remarks	: Based on data from similar materials
Assessment	: Probability of respiratory sensitisation in humans based on animal testing

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

Test Type	: Buehler Test
Exposure routes	: Skin contact
Species	: Guinea pig
Result	: positive
Remarks	: Based on data from similar materials
Assessment	: Probability or evidence of skin sensitisation in humans
Exposure routes	: Inhalation
Species	: Rat
Result	: positive
Remarks	: Based on data from similar materials
Assessment	: Probability of respiratory sensitisation in humans based on animal testing

##### **4,4'-Diphenylmethane diisocyanate:**

Test Type	: Buehler Test
Exposure routes	: Skin contact
Species	: Guinea pig
Result	: positive

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Assessment : Probability or evidence of skin sensitisation in humans

Exposure routes : Inhalation  
Species : Rat  
Result : positive  
Remarks : Based on data from similar materials

Assessment : Probability of respiratory sensitisation in humans based on animal testing

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

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

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

#### **4,4'-Diphenylmethane diisocyanate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: inhalation (dust/mist/fume)

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Method: OECD Test Guideline 474  
Result: negative

### Propylene carbonate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative

### Dibutyltin dilaurate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
Result: positive  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: positive  
Remarks: Based on data from similar materials

Germ cell mutagenicity- Assessment : Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

### Carcinogenicity

Suspected of causing cancer.

### Components:

#### 4,4'-Methylenediphenyl diisocyanate, oligomers:

Species : Rat  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 2 Years  
Result : positive

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Remarks : Based on data from similar materials

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

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

Species : Rat  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 2 Years  
Result : positive  
Remarks : Based on data from similar materials

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

### **4,4'-Diphenylmethane diisocyanate:**

Species : Rat  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 2 Years  
Result : positive  
Remarks : Based on data from similar materials

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

### **Propylene carbonate:**

Species : Mouse  
Application Route : Skin contact  
Exposure time : 104 weeks  
Result : negative

### **Dibutyltin dilaurate:**

Species : Mouse  
Application Route : Ingestion  
Exposure time : 2 Years  
Result : negative  
Remarks : Based on data from similar materials

### **Reproductive toxicity**

Not classified based on available information.

### **Components:**

#### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Method: OECD Test Guideline 414

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Result: negative  
Remarks: Based on data from similar materials

### **4,4'-Diphenylmethane diisocyanate:**

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Result: negative  
Remarks: Based on data from similar materials

### **Propylene carbonate:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Mouse  
Application Route: Ingestion  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Mouse  
Application Route: Ingestion  
Result: negative

### **Dibutyltin dilaurate:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 421  
Result: positive  
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: positive  
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, based on animal experiments., Clear evidence of adverse effects on development, based on animal experiments.

### **STOT - single exposure**

May cause respiratory irritation.

### **Components:**

#### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Assessment : May cause respiratory irritation.  
Remarks : Based on data from similar materials

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

Assessment : May cause respiratory irritation.

### 4,4'-Diphenylmethane diisocyanate:

Assessment : May cause respiratory irritation.

### Dibutyltin dilaurate:

Exposure routes : Ingestion  
Target Organs : thymus gland  
Assessment : Shown to produce significant health effects in animals at concentrations of 300 mg/kg bw or less.  
Remarks : Based on data from similar materials

### STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

### Product:

Assessment : May cause damage to organs through prolonged or repeated exposure.

### Components:

#### 4,4'-Methylenediphenyl diisocyanate, oligomers:

Exposure routes : inhalation (dust/mist/fume)  
Target Organs : Respiratory Tract  
Assessment : Shown to produce significant health effects in animals at concentrations of >0.02 to 0.2 mg/l/6h/d.

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

Exposure routes : inhalation (dust/mist/fume)  
Target Organs : Respiratory Tract  
Assessment : May cause damage to organs through prolonged or repeated exposure.

### 4,4'-Diphenylmethane diisocyanate:

Exposure routes : inhalation (dust/mist/fume)  
Target Organs : Respiratory Tract  
Assessment : Shown to produce significant health effects in animals at concentrations of >0.02 to 0.2 mg/l/6h/d.

### Dibutyltin dilaurate:

Exposure routes : Ingestion  
Target Organs : thymus gland  
Assessment : Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.



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### Repeated dose toxicity

#### Components:

##### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Species	: Rat
NOAEL	: 0,2 mg/m <sup>3</sup>
LOAEL	: 1 mg/m <sup>3</sup>
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 2 yr
Remarks	: Based on data from similar materials

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

Species	: Rat
NOAEL	: 0,0002 mg/l
LOAEL	: 0,001 mg/l
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 2 yr
Remarks	: Based on data from similar materials

##### **4,4'-Diphenylmethane diisocyanate:**

Species	: Rat
NOAEL	: 0,2 mg/m <sup>3</sup>
LOAEL	: 1 mg/m <sup>3</sup>
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 2 yr
Remarks	: Based on data from similar materials

##### **Propylene carbonate:**

Species	: Rat
NOAEL	: > 5.000 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days

##### **Dibutyltin dilaurate:**

Species	: Rat
NOAEL	: < 14 mg/kg
Application Route	: Ingestion
Exposure time	: 63 Days
Remarks	: Based on data from similar materials

### Aspiration toxicity

Not classified based on available information.

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### 11.2 Information on other hazards

#### Endocrine disrupting properties

##### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Experience with human exposure

##### Components:

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

Inhalation : Symptoms: Sensitisation, respiratory tract irritation  
Skin contact : Symptoms: Skin irritation  
Eye contact : Symptoms: Eye irritation

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## SECTION 12: Ecological information

### 12.1 Toxicity

##### Components:

#### 4,4'-Methylenediphenyl diisocyanate, oligomers:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 1.000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1.000 mg/l  
Exposure time: 24 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 1.640 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

NOEC (Desmodesmus subspicatus (green algae)): 1.640 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

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Toxicity to microorganisms : EC50 : > 100 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 10 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

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

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 1.000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 24 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Scenedesmus subspicatus): > 1.640 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

NOELR (Scenedesmus subspicatus): 1.640 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 : > 100 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: >= 10 mg/l  
Exposure time: 21 d  
Species: Daphnia (water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

### 4,4'-Diphenylmethane diisocyanate:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 3.000 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 129,7 mg/l  
Exposure time: 24 h

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Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 1.640 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

NOEC (Desmodesmus subspicatus (green algae)): 1.640 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 : > 100 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 10 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

### **Propylene carbonate:**

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 1.000 mg/l  
Exposure time: 96 h  
Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1.000 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): > 929 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Selenastrum capricornutum (green algae)): 929 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Pseudomonas putida): 25.619 mg/l  
Exposure time: 16 h  
Method: DIN 38 412 Part 8

### **Dibutyltin dilaurate:**

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 100 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 0,1 - 1 mg/l

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aquatic invertebrates		Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (activated sludge): > 1.000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
M-Factor (Chronic aquatic toxicity)	:	1

### 12.2 Persistence and degradability

#### Components:

##### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 302 Remarks: Based on data from similar materials
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##### **Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 0 % Exposure time: 28 d Remarks: Based on data from similar materials
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##### **4,4'-Diphenylmethane diisocyanate:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 302 Remarks: Based on data from similar materials
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##### **Propylene carbonate:**

Biodegradability	:	Result: Readily biodegradable. Biodegradation: > 90 % Exposure time: 28 d Method: Directive 67/548/EEC Annex V, C.4.A.
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##### **Dibutyltin dilaurate:**

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Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 23 %  
Exposure time: 39 d  
Method: OECD Test Guideline 301F

### 12.3 Bioaccumulative potential

#### Components:

##### **4,4'-Methylenediphenyl diisocyanate, oligomers:**

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 200  
Remarks: Based on data from similar materials

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

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 200  
Remarks: Based on data from similar materials

Partition coefficient: n-octanol/water : log Pow: 4,51

##### **4,4'-Diphenylmethane diisocyanate:**

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 200

Partition coefficient: n-octanol/water : log Pow: 4,51

##### **Propylene carbonate:**

Partition coefficient: n-octanol/water : log Pow: -0,48

##### **Dibutyltin dilaurate:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): 813

Partition coefficient: n-octanol/water : log Pow: 4,44  
Method: OECD Test Guideline 107

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or

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very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

#### Product:



Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods



Product : Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.



Waste Code : The following Waste Codes are only suggestions:  
  
used product  
08 04 09, waste adhesives and sealants containing organic solvents or other hazardous substances  
08 05 01, waste isocyanates  
  
unused product  
08 04 09, waste adhesives and sealants containing organic solvents or other hazardous substances  
08 05 01, waste isocyanates  
  
uncleaned packagings  
15 01 10, packaging containing residues of or contaminated by hazardous substances

Acc. Packaging Act properly emptied packaging:  
Properly emptied, non-contaminated packaging of non-hazardous products can be supplied to a system for the collection of sales packaging.

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### SECTION 14: Transport information

#### 14.1 UN number or ID number

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	UN 3334

#### 14.2 UN proper shipping name

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Aviation regulated liquid, n.o.s. (4,4'-Methylenediphenyl diisocyanate, oligomers, Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate)

#### 14.3 Transport hazard class(es)

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	9

#### 14.4 Packing group

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
<b>IATA (Cargo)</b>		
Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
<b>IATA (Passenger)</b>		
Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964



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Packing group : III  
Labels : Miscellaneous

### 14.5 Environmental hazards

**ADN** : Not regulated as a dangerous good  
**ADR** : Not regulated as a dangerous good  
**RID** : Not regulated as a dangerous good  
**IMDG** : Not regulated as a dangerous good

### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:  
Number on list 3  
4,4'-Diphenylmethane diisocyanate (Number on list 74, 56)  
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate (Number on list 74, 56)

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Dibutyltin dilaurate

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.  
Not applicable

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Water hazard class (Germany) : WGK 1 slightly hazardous to water  
Classification according to AwSV, Annex 1 (5.2)

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)  
Volatile organic compounds (VOC) content: 0 %, 0 g/l  
Remarks: VOC content excluding water

### Other regulations:

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

TRGS 430 (German regulatory requirements)

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

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### SECTION 16: Other information

Other information : Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

#### Full text of H-Statements

H314 : Causes severe skin burns and eye damage.  
H315 : Causes skin irritation.  
H317 : May cause an allergic skin reaction.  
H318 : Causes serious eye damage.  
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.  
H341 : Suspected of causing genetic defects.  
H351 : Suspected of causing cancer.  
H360FD : May damage fertility. May damage the unborn child.  
H370 : Causes damage to organs.  
H372 : Causes damage to organs through prolonged or repeated exposure.  
H373 : May cause damage to organs through prolonged or repeated exposure if inhaled.  
H400 : Very toxic to aquatic life.  
H410 : Very toxic to aquatic life with long lasting effects.  
EUH071 : Corrosive to the respiratory tract.

#### Full text of other abbreviations

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Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Carc.	: Carcinogenicity
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Muta.	: Germ cell mutagenicity
Repr.	: Reproductive toxicity
Resp. Sens.	: Respiratory sensitisation
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
STOT SE	: Specific target organ toxicity - single exposure
DE TRGS 900	: Germany. TRGS 900 - Occupational exposure limit values.
TRGS 430	: Germany. TRGS 430 - Isocyanates
DE TRGS 900 / AGW	: Time Weighted Average
TRGS 430 / AGW	: Occupational Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

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### Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

### Classification of the mixture:

Resp. Sens. 1	H334
Skin Sens. 1	H317
Carc. 2	H351
STOT RE 2	H373
Skin Irrit. 2	H315
STOT SE 3	H335
Eye Irrit. 2	H319

### Classification procedure:

Calculation method
Calculation method
Calculation method
Based on product data or assessment
Calculation method
Calculation method
Calculation method

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

DE / EN