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: 01.06.2022 14.0 11.11.2022 10772699-00014 Date of first issue: 11.06.2010

### 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- : Adhesives

stance/Mixture Professional use product

Recommended restrictions

on use

: May only be used by trained personnel.

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

#### **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.

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Specific target organ toxicity - repeated

exposure, Category 2

H373: May cause damage to organs through pro-

longed or repeated exposure.

Skin irritation, Category 2 H315: Causes skin irritation.

Specific target organ toxicity - single ex-

posure, 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 : Prevention:

P201 Obtain special instructions before use.

P260 Do not breathe vapours.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/face protection.

Response:

P304 + P340 + P312 IF INHALED: Remove person to fresh

air and keep comfortable for breathing. Call a POISON

CENTER/ doctor if you feel unwell.

P342 + P311 If experiencing respiratory symptoms: Call a

POISON CENTER/ doctor.

### 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

Dibutyltin dilaurate

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#### **Additional Labelling**

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

#### 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

Inc	C-No. dex-No. egistration number	Classification	Concentration (% w/w)
4,4'-Methylenediphenyl diisocya- 25 nate, oligomers 50	5686-28-6 00-040-3 1-2119457013-49	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	>= 5 - < 10

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		mg/l	
Reaction mass of 4,4'- methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Not Assigned 247-714-0 615-005-00-9 01-2119457015-45	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)	>= 5 - < 10
		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 diisocya- nate	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)	>= 5 - < 10
		specific concentration limit Eye Irrit. 2; H319 >= 5 % STOT SE 3; H335 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 %	
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	Skin Corr. 1; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Muta. 2; H341 Repr. 1B; H360FD STOT SE 1; H370	>= 0,1 - < 0,25

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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 ad-

vice 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, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

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#### 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, reac-

tive airways dysfunction syndrome).

Causes skin irritation.

May cause an allergic skin reaction.

Causes serious eye irritation.

May cause allergy or asthma symptoms or breathing difficul-

ties 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.

# **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media

Suitable extinguishing media : Alcohol-resistant foam

Carbon dioxide (CO2)

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 prod- :

ucts

Silicon oxides
Carbon oxides

Metal oxides

Nitrogen oxides (NOx)

Hydrogen cyanide (hydrocyanic acid)

Isocyanates

#### 5.3 Advice for firefighters

Special protective equipment :

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

Specific extinguishing meth- : Use extinguishing measures that are appropriate to local cir-

according to Regulation (EC) No. 1907/2006



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ods cumstances 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.

#### **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 pro-

tective 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 absor-

bent.

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 deter-

mine 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.

### **SECTION 7: Handling and storage**

### 7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

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

according to Regulation (EC) No. 1907/2006



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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 as-

sessment

Keep container tightly closed. Keep away from water. Protect from moisture.

Already sensitised individuals, and those susceptible

to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respira-

tory 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

Self-reactive substances and mixtures

Organic peroxides

Explosives Gases

Storage class (TRGS 510) : 10

Recommended storage tem: :

perature

15 - 25 °C

#### 7.3 Specific end use(s)

Specific use(s) : No data available

according to Regulation (EC) No. 1907/2006



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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'-	Not As- signed	AGW (Vapour and aerosols)	0,05 mg/m3	TRGS 430
methylenediphenyl diisocyanate and				
o-(p-				
isocyanatoben-				
zyl)phenyl isocya- nate				
Tiato	Peak-limit: ex	cursion factor (categ	ory): 1;=2=(I)	
			ed cases also a momentary v	alue can be
			ceeded. This substance will b	
			ling value., airway sensitizing	
4,4'-	101-68-8	AGW (Vapour	0,05 mg/m3	TRGS 430
Diphenylmethane diisocyanate		and aerosols)		
anoooyanato	Peak-limit: exc	cursion factor (categ	orv): 1:=2=(I)	I
			ed cases also a momentary v	alue can be
	established, that never can be exceeded. This substance will be indicated by			
	= = in combina		ling value., airway sensitizing	
		AGW (Vapour	0,05 mg/m3	DE TRGS
		and aerosols, inhalable frac-		900
		tion)		
	Peak-limit: ex	cursion factor (categ	ory): 1;=2=(I)	
	Further information: In well-found cases also a momentary value can be es-			
			eded. This substance will be i	
	in combination with an exceeding value., Skin absorption, When there is com-			
	pliance with the OEL and biological tolerance values, there is no risk of harming the unborn child, Substance sensitizing through the skin and respiratory			
	system	i cilia, Substance se	ensitizing through the skin an	u respiratory
Propylene car-	108-32-7	AGW (Vapour	2 ppm	DE TRGS
bonate		and aerosols)	8,5 mg/m3	900
		cursion factor (categ		
			compliance with the OEL ar	nd biological
D: (1 1 2			of harming the unborn child	DE TD00
Dimethyl siloxane	6//62-90-/	AGW (Inhalable	4 mg/m3	DE TRGS
reaction with silica	Further inform	fraction)	(Silica)	900
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			ia biologicai
Dibutyltin dilaurate	77-58-7	AGW (Vapour	0,0018 ppm	DE TRGS
,		and aerosols)	0,009 mg/m3	900
			(Tin)	
	Peak-limit: excursion factor (category): 1;(I)			
	Further inform	ation: Skin absorption	on, When there is compliance	e 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:

	T = `	T =	<u> </u>	1
Substance name	End Use	Exposure routes	Potential health effects	Value
Propylene carbonate	Workers	Inhalation	Long-term systemic effects	70,53 mg/m3
	Workers	Inhalation	Long-term local effects	20 mg/m3
	Workers	Skin contact	Long-term systemic effects	20 mg/kg bw/day
	Workers	Skin contact	Long-term local ef- fects	10 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	17,4 mg/m3
	Consumers	Inhalation	Long-term local ef- fects	10 mg/m3
	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 systemic effects	98 mg/m3
	Workers	Skin contact	Long-term systemic effects	13,9 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	29 mg/m3
	Consumers	Skin contact	Long-term systemic effects	8,3 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	8,3 mg/kg bw/day
4,4'- Methylenediphenyl diisocyanate, oligo- mers	Workers	Inhalation	Long-term systemic effects	0,05 mg/m3
	Workers	Inhalation	Acute systemic ef- fects	0,1 mg/m3
	Workers	Inhalation	Long-term local ef- fects	0,05 mg/m3
	Workers	Inhalation	Acute local effects	0,1 mg/m3
	Workers	Skin contact	Acute systemic ef- fects	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/m3
	Consumers	Inhalation	Acute systemic ef- fects	0,05 mg/m3
	Consumers	Inhalation	Long-term local ef- fects	0,025 mg/m3
	Consumers	Inhalation	Acute local effects	0,05 mg/m3

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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/m3
	Workers	Inhalation	Acute systemic effects	0,059 mg/m3
	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	0,0046 mg/m3
	Consumers	Inhalation	Acute systemic effects	0,04 mg/m3
	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	0,0031 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	0,02 mg/kg bw/day
4,4'-Diphenylmethane diisocyanate	Workers	Inhalation	Long-term local ef- fects	0,05 mg/m3
	Workers	Inhalation	Acute local effects	0,1 mg/m3
	Consumers	Inhalation	Long-term local effects	0,025 mg/m3
	Consumers	Inhalation	Acute local effects	0,05 mg/m3
Reaction mass of 4,4'- methylenediphenyl diisocyanate and o-(p-isocyanatoben-zyl)phenyl isocyanate	Workers	Inhalation	Long-term systemic effects	0,05 mg/m3
	Workers	Inhalation	Acute systemic effects	0,1 mg/m3
	Workers	Inhalation	Long-term local effects	0,05 mg/m3
	Workers	Inhalation	Acute local effects	0,1 mg/m3
	Workers	Skin contact	Acute systemic effects	50 mg/kg bw/day
	Workers	Skin contact	Acute local effects	28,7 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	0,025 mg/m3
	Consumers	Inhalation	Acute systemic ef- fects	0,05 mg/m3
	Consumers	Inhalation	Long-term local ef- fects	0,025 mg/m3

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Consumers	Inhalation	Acute local effects	0,05 mg/m3
Consumers	Skin contact	Acute systemic ef-	25 mg/kg
		fects	
Consumers	Skin contact	Acute local effects	17,2 mg/kg
Consumers	Ingestion	Acute systemic ef-	20 mg/kg
		fects	

# 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
	Soil	0,81 mg/kg dry
		weight (d.w.)
Polypropylene glycol	Fresh water	0,2 mg/l
	Freshwater - intermittent	1,06 mg/l
	Marine water	0,02 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	0,419 mg/kg dry
		weight (d.w.)
	Marine sediment	0,042 mg/kg dry
		weight (d.w.)
	Soil	0,031 mg/kg dry
		weight (d.w.)
4,4'-Methylenediphenyl diisocyanate, oligomers	Fresh water	1 mg/l
	Marine water	0,1 mg/l
	Intermittent use/release	10 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg
Dibutyltin dilaurate	Fresh water	0,463 µg/l
	Freshwater - intermittent	4,63 µg/l
	Marine water	0,0463 µg/l
	Marine water - intermittent	4,63 µg/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.)
	Soil	0,0407 mg/kg dry
		weight (d.w.)
	Oral (Secondary Poisoning)	0,2 mg/kg food
4,4'-Diphenylmethane diisocyanate	Fresh water	1 mg/l
	Marine water	0,1 mg/l
	Intermittent use/release	10 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg
Reaction mass of 4,4'-	Fresh water	1 mg/l

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methylenediphenyl diisocyanate and o-(p- isocyanatobenzyl)phenyl isocya- 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/face protection : Wear the following personal protective equipment:

Safety goggles

Equipment should conform to DIN EN 166

Hand protection

Material : Nitrile rubber
Break through time : >= 480 min
Glove thickness : >= 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 expo-

sure assessment demonstrates exposures outside the rec-

ommended 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

according to Regulation (EC) No. 1907/2006



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Physical state : paste

Colour : brown

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/cm³ (20 °C)

Relative vapour density : No data available

Particle characteristics

Particle size : Not applicable

according to Regulation (EC) No. 1907/2006



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

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9.2 Other information

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 con-

tact 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

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#### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

#### **SECTION 11: Toxicological information**

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

Information on likely routes of : Inhalation

exposure 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 tox-

icity

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

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4,4'-Diphenylmethane diisocyanate:

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

Assessment: The substance or mixture has no acute oral tox-

icitv

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 : Assessment: Corrosive to the respiratory tract.

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

Method : OECD Test Guideline 404

Result : Skin irritation

# 4,4'-Diphenylmethane diisocyanate:

according to Regulation (EC) No. 1907/2006



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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 national or regional regulation.

4,4'-Diphenylmethane diisocyanate:

Result : Irritation to eyes, reversing within 7 days Remarks : Based on national or regional regulation.

Propylene carbonate:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Irritation to eyes, reversing within 21 days

Dibutyltin dilaurate:

Species : Rabbit

Method : OECD Test Guideline 405
Result : Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

according to Regulation (EC) No. 1907/2006



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#### 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

Assessment : Probability or evidence of skin sensitisation in humans

Exposure routes : Inhalation Species : Rat

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Result : positive

Remarks : Based on data from similar materials

Assessment : Probability of respiratory sensitisation in humans based on

animal testing

Dibutyltin dilaurate:

Test Type : Maximisation 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

### 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)

according to Regulation (EC) No. 1907/2006



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Result: negative

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

Propylene carbonate:

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

Result: negative

Test Type: DNA damage and repair, unscheduled DNA syn-

thesis 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- As-

sessment

Positive result(s) from in vivo mammalian somatic cell muta-

genicity tests.

Remarks: Based on data from similar materials

#### Carcinogenicity

Suspected of causing cancer.

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#### **Components:**

4,4'-Methylenediphenyl diisocyanate, oligomers:

Species : Rat

Application Route : inhalation (dust/mist/fume)

Exposure time : 2 Years Result : positive

Remarks : Based on data from similar materials

Carcinogenicity - Assess-

ment

: 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 - Assess-

ment

: 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 - Assess-

ment

: Limited evidence of carcinogenicity in animal studies

#### Propylene carbonate:

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

#### Reproductive toxicity

Not classified based on available information.

#### **Components:**

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

Effects on foetal develop- : Test Type: Embryo-foetal development

ment Species: Rat

Application Route: inhalation (dust/mist/fume)

Method: OECD Test Guideline 414

Result: negative

according to Regulation (EC) No. 1907/2006



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Remarks: Based on data from similar materials

4,4'-Diphenylmethane diisocyanate:

Effects on foetal develop-

ment

: 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 develop-

ment

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 develop-

ment

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 - As-

sessment

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.

Remarks: Based on data from similar materials

### 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

according to Regulation (EC) No. 1907/2006



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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 : Immune sy

Target Organs : Immune system

Assessment : Shown to produce significant health effects in animals at con-

centrations 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 con-

centrations 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 con-

centrations of >0.02 to 0.2 mg/l/6h/d.

Dibutyltin dilaurate:

Exposure routes : Ingestion
Target Organs : Immune system

Assessment : Shown to produce significant health effects in animals at con-

centrations of 10 mg/kg bw or less.

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Remarks : Based on data from similar materials

#### Repeated dose toxicity

#### **Components:**

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

 Species
 : Rat

 NOAEL
 : 0,2 mg/m3

 LOAEL
 : 1 mg/m3

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/m3
LOAEL : 1 mg/m3

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 : 0,3 mg/kg

Application Route : Ingestion

Exposure time : 28 - 44 Days

Method : OECD Test Guideline 421

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 consid-

ered 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

# **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

according to Regulation (EC) No. 1907/2006



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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 (Chron-

ic toxicity)

NOEC: > 10 mg/lExposure 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 (Chron-

ic toxicity)

NOELR: >= 10 mg/lExposure 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

according to Regulation (EC) No. 1907/2006



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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 (Chron-

ic 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 : EL50 (Daphnia magna (Water flea)): > 0,1 - 1 mg/l

according to Regulation (EC) No. 1907/2006



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aquatic invertebrates Exposure time: 48 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

: ErC50 (Desmodesmus subspicatus (green algae)): > 1 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

M-Factor (Acute aquatic tox- : 1

city

Toxicity to microorganisms : NOEC (activated sludge): 1.000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

M-Factor (Chronic aquatic

toxicity)

ity)

### 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

# 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

#### 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

#### Propylene carbonate:

Biodegradability : Result: Readily biodegradable.

Biodegradation: > 90 % Exposure time: 28 d

Method: Directive 67/548/EEC Annex V, C.4.A.

#### Dibutyltin dilaurate:

according to Regulation (EC) No. 1907/2006



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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-

log Pow: -0,48

octanol/water

Dibutyltin dilaurate:

Bioaccumulation Species: Fish

Bioconcentration factor (BCF): 813

Partition coefficient: n-

log Pow: 4,44 octanol/water 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

according to Regulation (EC) No. 1907/2006



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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 consid-

ered 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 han-

dling 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 nonhazardous products can be supplied to a system for the col-

lection of sales packaging.

according to Regulation (EC) No. 1907/2006



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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.

 $(4,4'\text{-Methylenediphenyl diisocyanate, oligomers, Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-$ 

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

Class Subsidiary risks

**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

IATA (Cargo)

Packing instruction (cargo

aircraft)

: 964

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passen-

ger aircraft)

964

according to Regulation (EC) No. 1907/2006



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Packing instruction (LQ) : Y964
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, mixtures 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) 4,4'-Methylenediphenyl diisocyanate, oligomers (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 de-

plete the ozone layer

Not applicable

Regulation (EU) 2019/1021 on persistent organic pollu-

tants (recast)

: Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import

Not applicable

of dangerous chemicals

according to Regulation (EC) No. 1907/2006



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REACH - List of substances subject to authorisation : Not applicable

(Annex XIV)

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

Water hazard class (Germa-

iazaiu ciass (Geiilia-

ny)

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.

#### **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.

H332 : Harmful if inhaled.

H334 : May cause allergy or asthma symptoms or breathing difficul-

ties 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

according to Regulation (EC) No. 1907/2006



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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

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.Repr.Reproductive toxicityResp. 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 - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - 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

according to Regulation (EC) No. 1907/2006



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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

#### **Further information**

Training advice : Observe requirements and guidance related to training before

using this product at work.

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 Agen-

cy, http://echa.europa.eu/

### Classification of the mixture: Classification procedure:

Resp. Sens. 1	H334	Calculation method
Skin Sens. 1	H317	Calculation method
Carc. 2	H351	Calculation method
STOT RE 2	H373	Based on product data or assessment
Skin Irrit. 2	H315	Calculation method
STOT SE 3	H335	Calculation method
Eye Irrit. 2	H319	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