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

Revised on / Version: 05.09.2013 / 0003

Replaces revision of / Version: 14.12.2010 / 0002

Valid from: 05.09.2013

PDF print date: 05.09.2013

PU BOND 30 Sec / PU BOND 90 Sec / PU BOND 210 Sec

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

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

#### 1.1 Product identifier

**PU BOND 30 Sec / PU BOND 90 Sec / PU BOND 210 Sec**

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

##### Relevant identified uses of the substance or mixture:

2-K adhesive isocyanate component

##### Uses advised against:

No information available at present.

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

Central Solutions (GB) Ltd, Askern Industrial Estate, Moss Road, Askern, Doncaster, DN6 0DD

Telephone: + 44 (0)1302 708895, Fax: + 44 (0)1302 708895

E-mail address of the competent person: info@solxsolutions.com

#### 1.4 Emergency telephone

##### Emergency information services / official advisory body:

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##### Telephone number of the company in case of emergencies:

Tel.: + 44 (0)1302 708895 (9:00 - 17:00) (Office Hours Only)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

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

Hazard class	Hazard category	Hazard statement
Acute Tox.	4	H332-Harmful if inhaled.
Eye Irrit.	2	H319-Causes serious eye irritation.
STOT SE	3	H335-May cause respiratory irritation.
Skin Irrit.	2	H315-Causes skin irritation.
Resp. Sens.	1	H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens.	1	H317-May cause an allergic skin reaction.
STOT RE	2	H373-May cause damage to organs through prolonged or repeated exposure.
Carc.	2	H351-Suspected of causing cancer.

##### 2.1.2 Classification according to Directives 67/548/EEC and 1999/45/EC (including amendments)

Xn, Harmful, R20

Xi, Irritant, R36/37/38

Carc. Cat. 3, Carcinogen, R40

Sensitizing, R42/43

Xn, Harmful, R48/20

#### 2.2 Label elements

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



Danger

#### Hazard statement

H332-Harmful if inhaled. H319-Causes serious eye irritation. H335-May cause respiratory irritation. H315-Causes skin irritation. H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317-May cause an allergic skin reaction. H373-May cause damage to organs through prolonged or repeated exposure. H351-Suspected of causing cancer.

#### Prevention

P201-Obtain special instructions before use. P202-Do not handle until all safety precautions have been read and understood. P260-Do not breathe dust or mist. P280-Wear protective gloves/clothing and eye/face protection. P284-Wear respiratory protection.

#### Response

P304+P340-IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308+P313-IF exposed or concerned: Get medical advice/attention. P362+P364-Take off contaminated clothing and wash it before reuse.

EUH204-Contains isocyanates. May produce an allergic reaction.

Polymethylenepolyphenyl polyisocyanate, polymer with ethylenediamine, methyloxirane and propane-1,2-diol  
Diphenylmethanediisocyanate, isomeres and homologues  
Formaldehyde, polymer with aniline and carbonyl dichloride  
Methylenediphenyl diisocyanate, modified

### 2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006.

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006.

## SECTION 3: Composition/information on ingredients

### 3.1 Substance

n.a.

### 3.2 Mixture

Diphenylmethanediisocyanate, isomeres and homologues	
Registration number (REACH)	--
Index	---
EINECS, ELINCS, NLP	-
CAS	CAS 9016-87-9
content %	25-50
Classification according to Directive 67/548/EEC	Carcinogen, R40, Carc.Cat.3 Harmful, Xn, R20 Harmful, Xn, R48/20 Irritant, Xi, R36/37/38 Sensitising, R42/43

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<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT RE 2, H373
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<b>Polymethylenepolyphenyl polyisocyanate, polymer with ethylenediamine, methyloxirane and propane-1,2-diol</b>	
<b>Registration number (REACH)</b>	--
<b>Index</b>	---
<b>EINECS, ELINCS, NLP</b>	-
<b>CAS</b>	CAS 67815-87-6
<b>content %</b>	20-40
<b>Classification according to Directive 67/548/EEC</b>	Sensitizing, R42/43 Dangerous for the environment, R52-53
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	---

<b>Methylenediphenyl diisocyanate, modified</b>	
<b>Registration number (REACH)</b>	01-2119457013-49-XXXX
<b>Index</b>	---
<b>EINECS, ELINCS, NLP</b>	500-040-3 (NLP)
<b>CAS</b>	CAS 25686-28-6
<b>content %</b>	5-15
<b>Classification according to Directive 67/548/EEC</b>	Carcinogen, R40, Carc.Cat.3 Harmful, Xn, R20 Harmful, Xn, R48/20 Irritant, Xi, R36/37/38 Sensitizing, R42/43
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 Acute Tox. 4, H332 Resp. Sens. 1, H334 STOT SE 3, H335 Carc. 2, H351 STOT RE 2, H373

<b>Formaldehyde, polymer with aniline and carbonyl dichloride</b>	<b>Substance with specific conc. limit(s) acc. to REACH-registration</b>
<b>Registration number (REACH)</b>	01-2119457024-46-XXXX
<b>Index</b>	---
<b>EINECS, ELINCS, NLP</b>	500-079-6
<b>CAS</b>	CAS 32055-14-4
<b>content %</b>	1-10
<b>Classification according to Directive 67/548/EEC</b>	Carcinogen, R40, Carc.Cat.3 Harmful, Xn, R20 Harmful, Xn, R48/20 Irritant, Xi, R36/37/38 Sensitizing, R42/43
<b>Classification according to Regulation (EC) 1272/2008 (CLP)</b>	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Eye Irrit. 2, H319 Skin Sens. 1, H317 Acute Tox. 4, H332 Resp. Sens. 1, H334 STOT SE 3, H335 Carc. 2, H351 STOT RE 2, H373

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For the text of the R-phrases / H-phrases and classification codes (GHS/CLP), see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

Never pour anything into the mouth of an unconscious person!

#### Inhalation

Remove person from danger area.

Supply person with fresh air. Call doctor immediately.

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

Respiratory arrest - Artificial respiration apparatus necessary.

#### Skin contact

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

#### Eye contact

Remove contact lenses.

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

#### Ingestion

Rinse the mouth thoroughly with water.

Call doctor immediately - have Data Sheet available.

Do not induce vomiting.

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

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

In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

Asthmatic symptoms

No contact with products of this type in case of allergies, asthma und chronic respiratory tract disorders.

In case of sensitivity, concentrations below the limit value may already result in asthmatic symptoms.

In case of sensitivity, concentrations below the limit value may already result in asthmatic symptoms.

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

Eye wash

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Small fire:

Dry extinguisher

CO<sub>2</sub>

Large fire:

Water jet spray

Foam

#### Unsuitable extinguishing media

High volume water jet

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

In case of fire the following can develop:

Oxides of nitrogen

Oxides of carbon

Hydrocarbons

Hydrogen cyanide

Nitriles

Danger of bursting (explosion) when heated

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Protective respirator with independent air supply.

According to size of fire

Full protection, if necessary

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Dispose of contaminated extinction water according to official regulations.

## SECTION 6: Accidental release measures

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

Ensure sufficient supply of air.  
Avoid inhalation, and contact with eyes or skin.  
If applicable, caution - risk of slipping

### 6.2 Environmental precautions

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

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

Pick up mechanically and dispose of according to Section 13.  
Or:  
Soak up with absorbent material (e.g. universal binding agent) and dispose of according to Section 13.  
Do not close packing drum.  
If applicable:

Allow to stand for a few days in an unclosed container until reaction no longer occurs.  
Pressure increase will result in danger of bursting.

### 6.4 Reference to other sections

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

## SECTION 7: Handling and storage

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

### 7.1 Precautions for safe handling

#### 7.1.1 General recommendations

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

#### 7.1.2 Notes on general hygiene measures at the workplace

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

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

Keep out of access to unauthorised individuals.  
Not to be stored in gangways or stair wells.  
Store product closed and only in original packing.  
Store separately from acids.  
Store separately from alkalis.  
Protect against moisture and store closed.  
Store in a well ventilated place.  
Store cool

### 7.3 Specific end use(s)

No information available at present.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

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Chemical Name	Diphenylmethanediisocyanate, isomeres and homologues		Content %:25-50
WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as - NCO))	WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as - NCO))	---	
BMGV: 1 µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)	Other information: Sen (Isocyanates, all (as - NCO))		

Chemical Name	Polymethylenepolyphenyl polyisocyanate, polymer with ethylenediamine, methyloxirane and propane-1,2-diol		Content %:20-40
WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as - NCO))	WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as - NCO))	---	
BMGV: 1 µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)	Other information: Sen (Isocyanates, all (as - NCO))		

Chemical Name	Methylenediphenyl diisocyanate, modified		Content %:5-15
WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as - NCO))	WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as - NCO))	---	
BMGV: 1 µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)	Other information: ---		

Chemical Name	Formaldehyde, polymer with aniline and carbonyl dichloride		Content %:1-10
WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as - NCO))	WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as - NCO))	---	
BMGV: 1 µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)	Other information: Sen (Isocyanates, all (as - NCO))		

Chemical Name	Talc		Content %:
WEL-TWA: 1 mg/m3 (res. dust)	WEL-STEL: ---	---	
BMGV: ---	Other information: ---		

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

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.

\*\* = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

Methylenediphenyl diisocyanate, modified						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	0,1	mg/m3	
Workers / employees	Human - dermal	Short term, local effects	DNEL	28,7	mg/cm2	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	0,1	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	0,05	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	0,05	mg/m3	
Consumer	Human - dermal	Short term, systemic effects	DNEL	25	mg/kg bw/day	
Workers / employees	Human - dermal	Short term, systemic effects	DNEL	50	mg/kg bw/day	
Consumer	Human - oral	Short term, systemic effects	DNEL	20	mg/kg bw/day	
Consumer	Human - dermal	Short term, local effects	DNEL	17,2	mg/cm2	

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Consumer	Human - inhalation	Short term, local effects	DNEL	0,05	mg/m <sup>3</sup>	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	0,025	mg/m <sup>3</sup>	
Consumer	Human - inhalation	Long term, local effects	DNEL	0,025	mg/m <sup>3</sup>	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	0,05	mg/m <sup>3</sup>	
	Environment - marine		PNEC	0,1	mg/l	
	Environment - sewage treatment plant		PNEC	1	mg/l	
	Environment - freshwater		PNEC	1	mg/l	
	Environment - soil		PNEC	1	mg/kg	

## 8.2 Exposure controls

### 8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.  
 If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.  
 Applies only if maximum permissible exposure values are listed here.

### 8.2.2 Individual protection measures, such as personal protective equipment

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

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

Skin protection - Hand protection:  
 Chemical resistant protective gloves (EN 374).  
 If applicable  
 Safety gloves made of butyl (EN 374)  
 Safety gloves made of chloroprene (EN 374).  
 Minimum layer thickness in mm:  
 >= 0,5  
 Safety gloves made of fluorocarbon rubber (EN 374).  
 Minimum layer thickness in mm:  
 >= 0,4  
 Protective nitrile gloves (EN 374)  
 >= 0,35  
 Permeation time (penetration time) in minutes:  
 >= 480  
 The breakthrough times determined in accordance with EN 374 Part III were not obtained under practical conditions.  
 The recommended maximum wearing time is 50% of breakthrough time.  
 Protective hand cream recommended.

Skin protection - Other:

Respiratory protection:  
 If OES or MEL is exceeded.  
 Filter A P2 (EN 14387), code colour brown, white  
 Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:  
 Not applicable

Additional information on hand protection - No tests have been performed.  
 In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.  
 Selection of materials derived from glove manufacturer's indications.

Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account. Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.

In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.

The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

### 8.2.3 Environmental exposure controls

No information available at present.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state:	Pastelike
Colour:	Black
Odour:	Slightly
Odour threshold:	Not determined
pH-value:	n.a.
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined
Flash point:	Not determined
Evaporation rate:	Not determined
Flammability (solid, gas):	Not determined
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	Not determined
Vapour density (air = 1):	Not determined
Density:	1,28 g/cm <sup>3</sup>
Bulk density:	n.a.
Solubility(ies):	Not determined
Water solubility:	Insoluble
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	~60000 mPas (Thixotrope )
Explosive properties:	Product is not explosive.
Oxidising properties:	No

### 9.2 Other information

Miscibility:	Not determined
Fat solubility / solvent:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	Not determined

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product has not been tested.

### 10.2 Chemical stability

Stable with proper storage and handling.

### 10.3 Possibility of hazardous reactions

No dangerous reactions are known.

### 10.4 Conditions to avoid

See also section 7.

Moisture

### 10.5 Incompatible materials

See also section 7.

Bases

Acids

Amines



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Alcohol  
 Water

## 10.6 Hazardous decomposition products

See also section 5.2

CO<sub>2</sub>

CO<sub>2</sub> formation in closed tanks causes pressure to rise.

Pressure increase will result in danger of bursting.

## SECTION 11: Toxicological information

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

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Toxicity/effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:	ATE	18,3	mg/l/4h			calculated value, Vapours
Acute toxicity, by inhalation:	ATE	2,7	mg/l/4h			calculated value, Aerosol
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Respiratory tract irritation:						n.d.a.
Repeated dose toxicity:						n.d.a.
Symptoms:						n.d.a.
Other information:						Classification according to calculation procedure.

### Diphenylmethanediisocyanate, isomeres and homologues

Toxicity/effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit		
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Irritant
Serious eye damage/irritation:						Irritant
Respiratory or skin sensitisation:						Sensitizing (inhalation and skin contact)
Reproductive toxicity:						Negative
Specific target organ toxicity - single exposure (STOT-SE):						Irritation of the respiratory tract
Aspiration hazard:						No
Respiratory tract irritation:						Irritant

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Symptoms:						fever, coughing, headaches, nausea and vomiting., dizziness, breathing difficulties, laryngeal oedema, oedema of the lungs, chemical pneumonitis (condition similar to pneumonia), abdominal pain, diarrhoea
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Methylenediphenyl diisocyanate, modified						
Toxicity/effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rabbit		
Acute toxicity, by dermal route:	LD50	>9400	mg/kg	Rabbit		
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Irritant
Serious eye damage/irritation:						Irritant
Respiratory or skin sensitisation:						Sensitizing (inhalation and skin contact)
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Aspiration hazard:						No
Respiratory tract irritation:						Irritant
Symptoms:						watering eyes, breathing difficulties, asthmatic symptoms, coughing

Formaldehyde, polymer with aniline and carbonyl dichloride						
Toxicity/effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC0	2,24	mg/l/1h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol
Skin corrosion/irritation:						Irritant
Serious eye damage/irritation:				Rabbit		Irritant
Respiratory or skin sensitisation:						Sensitizing (inhalation and skin contact)
Carcinogenicity:						Limited evidence of a carcinogenic effect.
Respiratory tract irritation:						Irritant
Symptoms:						respiratory distress, coughing, mucous membrane irritation

Talc						
Toxicity/effect	Endpoint	Value	Unit	Organism	Test method	Notes
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant

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Respiratory or skin sensitisation:						Not sensitizing
Germ cell mutagenicity:						Negative
Carcinogenicity:						Negative
Symptoms:						mucous membrane irritation
Teratogenicity:				Rat		Negative

Silica, amorphous						
Toxicity/effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	
Skin corrosion/irritation:					OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:						Not irritant
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity (bacterial):					OECD 471 (Bacterial Reverse Mutation Test)	Negative

## SECTION 12: Ecological information

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

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Toxicity/effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:							n.d.a.
Toxicity to daphnia:							n.d.a.
Toxicity to algae:							n.d.a.
Persistence and degradability:							With water at the interface, transforms slowly with formation of CO <sub>2</sub> into a firm, insoluble reaction product with a high melting point (polycarbamide)., According to experience available to date, polycarbamide is inert and non-degradable.
Bioaccumulative potential:							n.d.a.
Mobility in soil:							n.d.a.
Results of PBT and vPvB assessment:							n.d.a.
Other adverse effects:							n.d.a.

Diphenylmethanediisocyanate, isomeres and homologues							
Toxicity/effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:	LC0	96h	>1000	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	

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Toxicity to daphnia:	EC50	24h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
Persistence and degradability:		28d	0	%		OECD 302 C (Inherent Biodegradability - Modified MITI Test (II))	Not biodegradable
Results of PBT and vPvB assessment:							No PBT substance
Toxicity to bacteria:	EC50	3h	>100	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	
Water solubility:							Insoluble 15°C

**Methylenediphenyl diisocyanate, modified**

Toxicity/effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:	LC50	96h	>1000	mg/l		OECD 203 (Fish, Acute Toxicity Test)	
Toxicity to daphnia:	NOEC/NO EL	21d	>10	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
Toxicity to algae:	EC50	72h	>1640	mg/l		OECD 201 (Alga, Growth Inhibition Test)	
Toxicity to bacteria:	EC50	3h	>100	mg/l		OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

**Formaldehyde, polymer with aniline and carbonyl dichloride**

Toxicity/effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:	LC50	96h	>1000	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
Toxicity to daphnia:	EC50	24h	>1000	mg/l	Daphnia magna		Analogous conclusion
Toxicity to algae:	NOEC/NO EL	72h	1640	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	Analogous conclusion
Toxicity to algae:	EC50	72h	1,5	mg/l		OECD 201 (Alga, Growth Inhibition Test)	

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Persistence and degradability:		28d	0	%		OECD 302 C (Inherent Biodegradability - Modified MITI Test (II))	With water at the interface, transforms slowly with formation of CO2 into a firm, insoluble reaction product with a high melting point (polycarbamide)., According to experience available to date, polycarbamide is inert and non-degradable.
Bioaccumulative potential:	Log Pow		5,22				A notable biological accumulation potential has to be expected (LogPow > 3).
Results of PBT and vPvB assessment:							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC50	3h	>100	mg/l	activated sludge		
Toxicity to annelids:	EC50	14d	>1000	mg/kg	Eisenia foetida		

Talc							
Toxicity/effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Water solubility:			< 0,1	%			

Silica, amorphous							
Toxicity/effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:	EC0	96h	>1000 0	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
Toxicity to daphnia:	EC0	24h	>1000 0	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
Toxicity to algae:	EL50	72h	>=100 00	mg/l		OECD 201 (Alga, Growth Inhibition Test)	
Persistence and degradability:							Mechanical precipitation possible.
Water solubility:							Insoluble20°C

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### For the substance / mixture / residual amounts

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product. Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2001/118/EC, 2001/119/EC, 2001/573/EC)

08 05 01 waste isocyanates

Recommendation:

Pay attention to local and national official regulations

E.g. dispose at suitable refuse site.

#### For contaminated packing material

Pay attention to local and national official regulations

Empty container completely.

Uncontaminated packaging can be recycled.

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

## SECTION 14: Transport information

### General statements

UN number: n.a.  
**Transport by road/by rail (ADR/RID)**  
 UN proper shipping name:  
 Transport hazard class(es): n.a.  
 Packing group: n.a.  
 Classification code: n.a.  
 LQ (ADR 2013): n.a.  
 LQ (ADR 2009): n.a.  
 Environmental hazards: Not applicable  
 Tunnel restriction code:

### Transport by sea (IMDG-code)

UN proper shipping name:  
 Transport hazard class(es): n.a.  
 Packing group: n.a.  
 Marine Pollutant: n.a.  
 Environmental hazards: Not applicable

### Transport by air (IATA)

UN proper shipping name:  
 Transport hazard class(es): n.a.  
 Packing group: n.a.  
 Environmental hazards: Not applicable

### Special precautions for user

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

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Non-dangerous material according to Transport Regulations.

## SECTION 15: Regulatory information

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

For classification and labelling see Section 2.

Observe restrictions: Yes

Comply with trade association/occupational health regulations.

Regulation (EC) No 1907/2006, Annex XVII

Diphenylmethanediisocyanate, isomeres and homologues

Formaldehyde, polymer with aniline and carbonyl dichloride

Methylenediphenyl diisocyanate, modified

### 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

## SECTION 16: Other information

These details refer to the product as it is delivered.

Revised sections: 2, 3, 8, 11, 12

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

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Acute Tox. 4, H332	Classification according to calculation procedure.
Eye Irrit. 2, H319	Classification according to calculation procedure.

STOT SE 3, H335	Classification according to calculation procedure.
Skin Irrit. 2, H315	Classification according to calculation procedure.
Resp. Sens. 1, H334	Classification according to calculation procedure.
Skin Sens. 1, H317	Classification according to calculation procedure.
STOT RE 2, H373	Classification according to calculation procedure.
Carc. 2, H351	Classification according to calculation procedure.

The following phrases represent the posted R phrases / H phrases, Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

20 Harmful by inhalation.

36/37/38 Irritating to eyes, respiratory system and skin.

40 Limited evidence of a carcinogenic effect.

42/43 May cause sensitization by inhalation and skin contact.

48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

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

Acute Tox. — Acute toxicity - inhalation

Eye Irrit. — Eye irritation

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

Skin Irrit. — Skin irritation

Resp. Sens. — Respiratory sensitization

Skin Sens. — Skin sensitization

STOT RE — Specific target organ toxicity - repeated exposure

Carc. — Carcinogenicity

## Any abbreviations and acronyms used in this document:

AC Article Categories

acc., acc. to according, according to

ACGIH American Conference of Governmental Industrial Hygienists

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)

AOEL Acceptable Operator Exposure Level

AOX Adsorbable organic halogen compounds

approx. approximately

Art., Art. no. Article number

ATE Acute Toxicity Estimate according to Regulation (EC) 1272/2008 (CLP)

BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BCF Bioconcentration factor

BGV Berufsgenossenschaftliche Vorschrift (= Accident Prevention Regulation)

BHT Butylhydroxytoluol (= 2,6-Di-*t*-butyl-4-methyl-phenol)

BMGV Biological monitoring guidance value (EH40, UK)

BOD Biochemical oxygen demand

BSEF Bromine Science and Environmental Forum

bw body weight

CAS Chemical Abstracts Service

CEC Coordinating European Council for the Development of Performance Tests for Fuels, Lubricants and Other Fluids

CESIO Comité Européen des Agents de Surface et de leurs Intermédiaires Organiques

CIPAC Collaborative International Pesticides Analytical Council

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CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

COD Chemical oxygen demand

CTFA Cosmetic, Toiletry, and Fragrance Association

DMEL Derived Minimum Effect Level

DNEL Derived No Effect Level

DOC Dissolved organic carbon

DT50 Dwell Time - 50% reduction of start concentration

DVS Deutscher Verband für Schweißen und verwandte Verfahren e.V. (= German Association for Welding and Allied Processes)

dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance

EC European Community

ECHA European Chemicals Agency

EEA European Economic Area

EEC European Economic Community

EINECS European Inventory of Existing Commercial Chemical Substances

ELINCS European List of Notified Chemical Substances

EN European Norms

EPA United States Environmental Protection Agency (United States of America)

ERC Environmental Release Categories

ES Exposure scenario

etc. et cetera

EU European Union

EWC European Waste Catalogue

Fax. Fax number

gen. general

GHS Globally Harmonized System of Classification and Labelling of Chemicals

GWP Global warming potential

HET-CAM Hen's Egg Test - Chorionallantoic Membrane

HGWP Halocarbon Global Warming Potential

IARC International Agency for Research on Cancer

IATA International Air Transport Association

IBC Intermediate Bulk Container

IBC (Code) International Bulk Chemical (Code)

IC Inhibitory concentration

IMDG-code International Maritime Code for Dangerous Goods

incl. including, inclusive

IUCLID International Uniform Chemical Information Database

LC lethal concentration

LC50 lethal concentration 50 percent kill

LCLo lowest published lethal concentration

LD Lethal Dose of a chemical

LD50 Lethal Dose, 50% kill

LDLo Lethal Dose Low

LOAEL Lowest Observed Adverse Effect Level

LOEC Lowest Observed Effect Concentration

LOEL Lowest Observed Effect Level

LQ Limited Quantities

MARPOL International Convention for the Prevention of Marine Pollution from Ships

n.a. not applicable

n.av. not available

n.c. not checked

n.d.a. no data available

NIOSH National Institute of Occupational Safety and Health (United States of America)

NOAEC No Observed Adverse Effective Concentration

NOAEL No Observed Adverse Effect Level

NOEC No Observed Effect Concentration

NOEL No Observed Effect Level

ODP Ozone Depletion Potential

OECD Organisation for Economic Co-operation and Development

org. organic



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PAH polycyclic aromatic hydrocarbon  
PBT persistent, bioaccumulative and toxic  
PC Chemical product category  
PE Polyethylene  
PNEC Predicted No Effect Concentration  
POCP Photochemical ozone creation potential  
ppm parts per million  
PROC Process category  
PTFE Polytetrafluorethylene  
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)  
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.  
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)  
SADT Self-Accelerating Decomposition Temperature  
SAR Structure Activity Relationship  
SU Sector of use  
SVHC Substances of Very High Concern  
Tel. Telephone  
ThOD Theoretical oxygen demand  
TOC Total organic carbon  
TRGS Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances)  
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods  
VbF Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria))  
VOC Volatile organic compounds  
vPvB very persistent and very bioaccumulative  
WEL-TWA, WEL-STEL WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period), WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period) (EH40, UK).  
WHO World Health Organization  
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.  
No responsibility.