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

Revision date / version: 01.11.2021 / 0008

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COSMO® PU-265.110

(COSMOPUR 800 - Härter)

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

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

#### 1.1 Product identifier

**COSMO® PU-265.110**

**(COSMOPUR 800 - Härter)**

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

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

Adhesive

**Uses advised against:**

No information available at present.

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

Weiss Chemie + Technik GmbH & Co. KG

Hansastraße 2

35708 Haiger

Tel: +49 (0) 2773 / 815-0

msds@weiss-chemie.de

www.weiss-chemie.de

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

#### 1.4 Emergency telephone number

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

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

+49 (0) 700 / 24 112 112 (WIC)

+1 872 5888271 (WIC)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

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

| Hazard class | Hazard category | Hazard statement   |
|--------------|-----------------|--|
| 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.  |
| Carc.        | 2               | H351-Suspected of causing cancer.  |
| STOT RE      | 2               | H373-May cause damage to organs through prolonged or repeated exposure by inhalation (respiratory system). |

#### 2.2 Label elements

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



**Danger**

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. H351-Suspected of causing cancer. H373-May cause damage to organs through prolonged or repeated exposure by inhalation (respiratory system).

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

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

EUH204-Contains isocyanates. May produce an allergic reaction.

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

Diphenylmethanediisocyanate, isomers and homologues

4,4'-methylenediphenyl diisocyanate

o-(p-isocyanatobenzyl)phenyl isocyanate

2,2'-methylenediphenyl diisocyanate

#### 2.3 Other hazards

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

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

n.a.

#### 3.2 Mixtures

| Diphenylmethanediisocyanate, isomers and homologues                    |  |
|--|--|
| Registration number (REACH)  | ---  |
| Index  | ---  |
| EINECS, ELINCS, NLP, REACH-IT List-No.                                 | ---  |
| CAS  | 9016-87-9  |
| content %  | 70-<90   |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Acute Tox. 4, H332<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317<br>Carc. 2, H351<br>STOT SE 3, H335<br>STOT RE 2, H373 (respiratory system) (as inhalation) |
| Specific Concentration Limits and ATE                                  | Skin Irrit. 2, H315: >=5 %<br>Eye Irrit. 2, H319: >=5 %<br>Resp. Sens. 1, H334: >=0,1 %<br>STOT SE 3, H335: >=5 %<br>ATE (as inhalation): 1.5 mg/l/4h  |

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

| o-(p-isocyanatobenzyl)phenyl isocyanate                                |  |
|--|--|
| Registration number (REACH)  | 01-2119480143-45-XXXX  |
| Index  | 615-005-00-9   |
| EINECS, ELINCS, NLP, REACH-IT List-No.                                 | 227-534-9  |
| CAS  | 5873-54-1  |
| content %  | 5-<15  |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Acute Tox. 4, H332<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317<br>Carc. 2, H351<br>STOT SE 3, H335<br>STOT RE 2, H373 (respiratory system) (as inhalation) |
| Specific Concentration Limits and ATE                                  | Skin Irrit. 2, H315: >=5 %<br>Eye Irrit. 2, H319: >=5 %<br>Resp. Sens. 1, H334: >=0,1 %<br>STOT SE 3, H335: >=5 %<br>ATE (as inhalation, Aerosol): 1.5 mg/l/4h   |

| 2,2'-methylenediphenyl diisocyanate                                    |  |
|--|--|
| Registration number (REACH)  | 01-2119927323-43-XXXX  |
| Index  | 615-005-00-9   |
| EINECS, ELINCS, NLP, REACH-IT List-No.                                 | 219-799-4  |
| CAS  | 2536-05-2  |
| content %  | 0,01-<0,1  |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Acute Tox. 4, H332<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317<br>Carc. 2, H351<br>STOT SE 3, H335<br>STOT RE 2, H373 (respiratory system) (as inhalation) |
| Specific Concentration Limits and ATE                                  | Skin Irrit. 2, H315: >=5 %<br>Eye Irrit. 2, H319: >=5 %<br>Resp. Sens. 1, H334: >=0,1 %<br>STOT SE 3, H335: >=5 %<br>ATE (as inhalation, Aerosol): 1.5 mg/l  |

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

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

First-aiders should ensure they are protected!  
Never pour anything into the mouth of an unconscious person!

##### Inhalation

Remove person from danger area.

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

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

Respiratory arrest - Artificial respiration apparatus necessary.

##### Skin contact

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

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

Dab away with polyethylene glycol 400

#### Eye contact

Remove contact lenses.

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

#### Ingestion

Rinse the mouth thoroughly with water.

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

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

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

The following may occur:

Dermatitis (skin inflammation)

Drying of the skin.

Allergic contact eczema

Discoloration of the skin

Irritant to mucosa of the nose and throat

Coughing

Headaches

Effect on the central nervous system

Asthmatic symptoms

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

Respiratory distress

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

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

In case of irritation of the lungs, perform first-aid with controlled-dosage aerosol dexamethasone.

Pulmonary oedema prophylaxis

Medical supervision necessary due to possibility of delayed reaction.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

CO<sub>2</sub>

Extinguishing powder

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 carbon

Oxides of nitrogen

Isocyanates

Hydrocyanic acid (hydrogen cyanide)

Toxic gases

Danger of bursting (explosion) when heated

#### 5.3 Advice for firefighters

For personal protective equipment see Section 8.

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

Protective respirator with independent air supply.

According to size of fire

Full protection, if necessary.

Cool container at risk with water.

Dispose of contaminated extinction water according to official regulations.

### SECTION 6: Accidental release measures

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

##### 6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.

Ensure sufficient ventilation, remove sources of ignition.

Avoid dust formation with solid or powder products.

Leave the danger zone if possible, use existing emergency plans if necessary.

Ensure sufficient supply of air.

Avoid inhalation, and contact with eyes or skin.

If applicable, caution - risk of slipping.

##### 6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

#### 6.2 Environmental precautions

If leakage occurs, dam up.

Resolve leaks if this possible without risk.

Prevent surface and ground-water infiltration, as well as ground penetration.

Prevent from entering drainage system.

If accidental entry into drainage system occurs, inform responsible authorities.

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

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth, sawdust) and dispose of according to Section 13.

Allow to stand for a few days in an unclosed container until reaction no longer occurs.

Keep moist.

Do not close packing drum.

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

#### 6.4 Reference to other sections

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

### SECTION 7: Handling and storage

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

#### 7.1 Precautions for safe handling

##### 7.1.1 General recommendations

Ensure good ventilation.

Avoid inhalation of the vapours.

If applicable, suction measures at the workstation or on the processing machine necessary.

Avoid contact with eyes or skin.

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

Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.

Observe directions on label and instructions for use.

Use working methods according to operating instructions.

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

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedings.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

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

Keep out of access to unauthorised individuals.

Not to be stored in gangways or stair wells.

Store product closed and only in original packing.

Keep protected from direct sunlight and temperatures over 50°C.

Only store at temperatures from 15 to 45°C.

Store in a dry place.

#### 7.3 Specific end use(s)

Adhesive

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

| Chemical Name | Diphenylmethanediisocyanate, isomeres and homologues |  | Content %:70- <90 |
|---------------|--|--|-------------------|
|---------------|--|--|-------------------|

|  |   |     |  |
|--|---|-----|--|
| WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as -NCO)) | WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as -NCO)) | --- |  |
|--|---|-----|--|

|  |   |  |  |
|--|---|--|--|
| Monitoring procedures: ---   |   |  |  |
| BMGV: 1 µmol isocyanate-derived diamine/mol creatinine in urine (At the end of the period of exposure) | Other information: Sen (Isocyanates, all (as -NCO)) |  |  |

| Chemical Name | 4,4'-methylene-diphenyl diisocyanate |  | Content %:5-<15 |
|---------------|--------------------------------------|--|-----------------|
|---------------|--------------------------------------|--|-----------------|

|  |   |     |  |
|--|---|-----|--|
| WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as -NCO)) | WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as -NCO)) | --- |  |
|--|---|-----|--|

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

| Chemical Name | o-(p-isocyanatobenzyl)phenyl isocyanate |  | Content %:5-<15 |
|---------------|---|--|-----------------|
|---------------|---|--|-----------------|

|  |   |     |  |
|--|---|-----|--|
| WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as -NCO)) | WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as -NCO)) | --- |  |
|--|---|-----|--|

|  |   |  |  |
|--|---|--|--|
| Monitoring procedures: ---   |   |  |  |
| BMGV: 1 µmol isocyanate-derived diamine/mol creatinine in urine (At the end of the period of exposure) | Other information: Sen (Isocyanates, all (as -NCO)) |  |  |

| Chemical Name | 2,2'-methylene-diphenyl diisocyanate |  | Content %:0,01- <0,1 |
|---------------|--------------------------------------|--|----------------------|
|---------------|--------------------------------------|--|----------------------|

|  |   |     |  |
|--|---|-----|--|
| WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as -NCO)) | WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as -NCO)) | --- |  |
|--|---|-----|--|

|  |   |  |  |
|--|---|--|--|
| Monitoring procedures: ---   |   |  |  |
| BMGV: 1 µmol isocyanate-derived diamine/mol creatinine in urine (At the end of the period of exposure) | Other information: Sen (Isocyanates, all (as -NCO)) |  |  |

| 4,4'-methylene-diphenyl diisocyanate |   |                              |            |       |                    |      |
|--------------------------------------|---|------------------------------|------------|-------|--------------------|------|
| Area of application                  | Exposure route / Environmental compartment    | Effect on health             | Descriptor | Value | Unit               | Note |
|                                      | Environment - freshwater                      |                              | PNEC       | 3,7   | µg/l               |      |
|                                      | Environment - marine                          |                              | PNEC       | 0,37  | µg/l               |      |
|                                      | Environment - sewage treatment plant          |                              | PNEC       | 1     | mg/l               |      |
|                                      | Environment - soil                            |                              | PNEC       | 2,33  | mg/kg dw           |      |
|                                      | Environment - sporadic (intermittent) release |                              | PNEC       | 37    | µg/l               |      |
|                                      | Environment - sediment, freshwater            |                              | PNEC       | 11,7  | mg/kg dry weight   |      |
|                                      | Environment - sediment, marine                |                              | PNEC       | 1,17  | mg/kg dry weight   |      |
| Consumer                             | Human - oral                                  | Short term, systemic effects | DNEL       | 20    | mg/kg bw/day       |      |
| Consumer                             | Human - dermal                                | Short term, local effects    | DNEL       | 17,2  | mg/cm <sup>2</sup> |      |
| Consumer                             | Human - dermal                                | Short term, systemic effects | DNEL       | 25    | mg/kg bw/day       |      |
| Consumer                             | Human - inhalation                            | Short term, local effects    | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Consumer                             | Human - inhalation                            | Short term, systemic effects | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Consumer                             | Human - inhalation                            | Long term, local effects     | DNEL       | 0,025 | mg/m <sup>3</sup>  |      |
| Consumer                             | Human - inhalation                            | Long term, systemic effects  | DNEL       | 0,025 | mg/m <sup>3</sup>  |      |
| Workers / employees                  | Human - dermal                                | Short term, local effects    | DNEL       | 28,7  | mg/cm <sup>2</sup> |      |
| Workers / employees                  | Human - dermal                                | Short term, systemic effects | DNEL       | 50    | mg/kg bw/day       |      |
| Workers / employees                  | Human - inhalation                            | Short term, local effects    | DNEL       | 0,1   | mg/m <sup>3</sup>  |      |
| Workers / employees                  | Human - inhalation                            | Short term, systemic effects | DNEL       | 0,1   | mg/m <sup>3</sup>  |      |
| Workers / employees                  | Human - inhalation                            | Long term, local effects     | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Workers / employees                  | Human - inhalation                            | Long term, systemic effects  | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |

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(COSMOPUR 800 - Härter)

| o-(p-isocyanatobenzyl)phenyl isocyanate |   |                              |            |       |                    |      |
|---|---|------------------------------|------------|-------|--------------------|------|
| Area of application                     | Exposure route / Environmental compartment    | Effect on health             | Descriptor | Value | Unit               | Note |
|   | Environment - freshwater                      |                              | PNEC       | 1     | mg/l               |      |
|   | Environment - marine                          |                              | PNEC       | 0,1   | mg/l               |      |
|   | Environment - sewage treatment plant          |                              | PNEC       | 1     | mg/l               |      |
|   | Environment - soil                            |                              | PNEC       | 1     | mg/kg dw           |      |
|   | Environment - sporadic (intermittent) release |                              | PNEC       | 10    | mg/l               |      |
| Consumer                                | Human - oral                                  | Short term, systemic effects | DNEL       | 20    | mg/kg bw/day       |      |
| Consumer                                | Human - dermal                                | Short term, local effects    | DNEL       | 17,2  | mg/cm <sup>2</sup> |      |
| Consumer                                | Human - dermal                                | Short term, systemic effects | DNEL       | 25    | mg/kg bw/d         |      |
| Consumer                                | Human - inhalation                            | Short term, local effects    | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Consumer                                | Human - inhalation                            | Short term, systemic effects | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Consumer                                | Human - inhalation                            | Long term, local effects     | DNEL       | 0,02  | mg/m <sup>3</sup>  |      |
| Consumer                                | Human - inhalation                            | Long term, systemic effects  | DNEL       | 0,02  | mg/m <sup>3</sup>  |      |
| Workers / employees                     | Human - dermal                                | Short term, systemic effects | DNEL       | 50    | mg/kg bw/d         |      |
| Workers / employees                     | Human - dermal                                | Short term, local effects    | DNEL       | 28,7  | mg/cm <sup>2</sup> |      |
| Workers / employees                     | Human - inhalation                            | Short term, systemic effects | DNEL       | 0,1   | mg/m <sup>3</sup>  |      |
| Workers / employees                     | Human - inhalation                            | Short term, local effects    | DNEL       | 0,1   | mg/m <sup>3</sup>  |      |
| Workers / employees                     | Human - inhalation                            | Long term, systemic effects  | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Workers / employees                     | Human - inhalation                            | Long term, local effects     | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |

| 2,2'-methylenebis(phenyl isocyanate) |  |                              |            |       |                    |      |
|--------------------------------------|--|------------------------------|------------|-------|--------------------|------|
| Area of application                  | Exposure route / Environmental compartment           | Effect on health             | Descriptor | Value | Unit               | Note |
|                                      | Environment - freshwater                             |                              | PNEC       | 1     | mg/l               |      |
|                                      | Environment - marine                                 |                              | PNEC       | 0,1   | mg/l               |      |
|                                      | Environment - sewage treatment plant                 |                              | PNEC       | 1     | mg/l               |      |
|                                      | Environment - soil                                   |                              | PNEC       | 1     | mg/kg dw           |      |
|                                      | Environment - water, sporadic (intermittent) release |                              | PNEC       | 10    | mg/l               |      |
| Consumer                             | Human - oral   | Short term, systemic effects | DNEL       | 20    | mg/kg bw/d         |      |
| Consumer                             | Human - dermal                                       | Short term, local effects    | DNEL       | 17,2  | mg/cm <sup>2</sup> |      |
| Consumer                             | Human - dermal                                       | Short term, systemic effects | DNEL       | 25    | mg/kg bw/d         |      |
| Consumer                             | Human - inhalation                                   | Short term, systemic effects | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Consumer                             | Human - inhalation                                   | Short term, local effects    | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Consumer                             | Human - inhalation                                   | Long term, systemic effects  | DNEL       | 0,02  | mg/m <sup>3</sup>  |      |
| Consumer                             | Human - inhalation                                   | Long term, local effects     | DNEL       | 0,02  | mg/m <sup>3</sup>  |      |
| Workers / employees                  | Human - dermal                                       | Short term, local effects    | DNEL       | 28,7  | mg/cm <sup>2</sup> |      |
| Workers / employees                  | Human - dermal                                       | Short term, systemic effects | DNEL       | 50    | mg/kg bw/d         |      |
| Workers / employees                  | Human - inhalation                                   | Short term, local effects    | DNEL       | 0,1   | mg/m <sup>3</sup>  |      |
| Workers / employees                  | Human - inhalation                                   | Short term, systemic effects | DNEL       | 0,1   | mg/m <sup>3</sup>  |      |
| Workers / employees                  | Human - inhalation                                   | Long term, systemic effects  | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |
| Workers / employees                  | Human - inhalation                                   | Long term, local effects     | DNEL       | 0,05  | mg/m <sup>3</sup>  |      |

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WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany). (8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period). (8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGV = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage. \*\* = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision. (13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE). (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

## 8.2 Exposure controls

### 8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction. If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn. Applies only if maximum permissible exposure values are listed here. Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques. These are specified by e.g. EN 14042. EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

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

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

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

Skin protection - Hand protection:  
Chemical resistant protective gloves (EN ISO 374).  
Recommended

Protective nitrile gloves (EN ISO 374).  
Minimum layer thickness in mm:

>= 0,35  
Permeation time (penetration time) in minutes:  
>= 480

The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions. The recommended maximum wearing time is 50% of breakthrough time. Protective hand cream recommended.

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

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

Thermal hazards:  
Not applicable

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

### 8.2.3 Environmental exposure controls

No information available at present.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state: Liquid  
Colour: Brown  
Odour: Slight earthy odour.  
Melting point/freezing point: -30 °C (ISO 3016)  
Boiling point or initial boiling point and boiling range: >300 °C (DIN 53171)  
Flammability: Flammable  
Lower explosion limit: There is no information available on this parameter.  
Upper explosion limit: There is no information available on this parameter.  
Flash point: ~229 °C (DIN EN 22719 (Pensky-Martens, closed cup))  
Auto-ignition temperature: >500 °C (DIN 51794)  
Decomposition temperature: There is no information available on this parameter.  
pH: Mixture reacts with water.  
Kinematic viscosity: ~145 mPas (20°C, DIN 53019, Dynamic viscosity )  
Solubility: Not miscible 15°C  
Partition coefficient n-octanol/water (log value): Does not apply to mixtures.  
Vapour pressure: There is no information available on this parameter.  
Density and/or relative density: ~1,23 g/cm<sup>3</sup> (20°C, DIN 51577)  
Relative vapour density: There is no information available on this parameter.  
Particle characteristics: Does not apply to liquids.

**9.2 Other information**  
Explosives: There is no information available on this parameter.  
Aerosols - Chemical heat of combustion: There is no information available on this parameter.  
Oxidising liquids: There is no information available on this parameter.  
Bulk density: n.a.  
Molar mass: There is no information available on this parameter.  
Metal content: There is no information available on this parameter.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

reacts with water

### 10.2 Chemical stability

Stable with proper storage and handling.

### 10.3 Possibility of hazardous reactions

Exothermic reaction possible with:

Alcohols  
Amines

Bases  
Acids

Water

Development of:

Carbon dioxide

CO<sub>2</sub> formation in closed tanks causes pressure to rise. Pressure increase will result in danger of bursting.

### 10.4 Conditions to avoid

See also section 7.

Protect from humidity.

Polymerisation due to high heat is possible.

T ~ 260°C

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**10.5 Incompatible materials**

See also section 7.  
 Acids  
 Bases  
 Amines  
 Alcohols  
 Water

**10.6 Hazardous decomposition products**

See also section 5.2  
 No decomposition when used as directed.

**SECTION 11: Toxicological information**

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

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

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| Toxicity / effect   | Endpo<br>int | Value  | Unit    | Organis<br>m | Test method | Notes                     |
|---|--------------|--------|---------|--------------|-------------|---------------------------|
| Acute toxicity, by oral route:                                |              |        |         |              |             | n.d.a.                    |
| Acute toxicity, by dermal route:                              |              |        |         |              |             | n.d.a.                    |
| Acute toxicity, by inhalation:                                | ATE          | >10~20 | mg/l/4h |              |             | calculated value, Vapours |
| Skin corrosion/irritation:                                    |              |        |         |              |             | n.d.a.                    |
| Serious eye damage/irritation:                                |              |        |         |              |             | n.d.a.                    |
| Respiratory or skin sensitisation:                            |              |        |         |              |             | n.d.a.                    |
| Germ cell mutagenicity:                                       |              |        |         |              |             | n.d.a.                    |
| Carcinogenicity:  |              |        |         |              |             | n.d.a.                    |
| Reproductive toxicity:  |              |        |         |              |             | n.d.a.                    |
| Specific target organ toxicity - single exposure (STOT-SE):   |              |        |         |              |             | n.d.a.                    |
| Specific target organ toxicity - repeated exposure (STOT-RE): |              |        |         |              |             | n.d.a.                    |
| Aspiration hazard:  |              |        |         |              |             | n.d.a.                    |
| Symptoms:   |              |        |         |              |             | n.d.a.                    |

**Diphenylmethanediisocyanate, isomeres and homologues**

| Toxicity / effect   | Endpo<br>int | Value     | Unit              | Organis<br>m           | Test method  | Notes  |
|---|--------------|-----------|-------------------|------------------------|--|--|
| Acute toxicity, by oral route:  | LD50         | >5000     | mg/kg             | Rat                    | OECD 401 (Acute Oral Toxicity)                               |  |
| Acute toxicity, by dermal route:  | LD50         | >5000     | mg/kg             | Rabbit                 | OECD 402 (Acute Dermal Toxicity)                             |  |
| Acute toxicity, by inhalation:  | ATE          | 1,5       | mg/l/4h           |                        |  | Expert judgement.  |
| Acute toxicity, by inhalation:  | LC50         | 0,31-0,49 | mg/l/4h           | Rat                    | OECD 403 (Acute Inhalation Toxicity)                         | Aerosol, Does not conform with EU classification.                      |
| Skin corrosion/irritation:  |              |           |                   | Rabbit                 | OECD 404 (Acute Dermal Irritation/Corrosion)                 | Skin Irrit. 2  |
| Serious eye damage/irritation:  |              |           |                   | Rabbit                 | OECD 405 (Acute Eye Irritation/Corrosion)                    | Eye Irrit. 2   |
| Respiratory or skin sensitisation:                                      |              |           |                   | Mouse                  | OECD 429 (Skin Sensitisation - Local Lymph Node Assay)       | Yes (skin contact), Analogous conclusion                               |
| Respiratory or skin sensitisation:                                      |              |           |                   | Guinea pig             | OECD 406 (Skin Sensitisation)                                | Yes (skin contact)   |
| Respiratory or skin sensitisation:                                      |              |           |                   | Rat                    |  | Yes (inhalation)   |
| Germ cell mutagenicity:   |              |           |                   | Rat                    | OECD 474 (Mammalian Erythrocyte Micronucleus Test)           | Negative, Analogous conclusion   |
| Germ cell mutagenicity:   |              |           |                   | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test)                   | Negative   |
| Reproductive toxicity:  | NOAEL        | 4         | mg/m <sup>3</sup> | Rat                    | OECD 414 (Prenatal Developmental Toxicity Study)             | Aerosol, Negative  |
| Carcinogenicity:  |              |           |                   | Rat                    | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Limited evidence of a carcinogenic effect.                    |
| Specific target organ toxicity - single exposure (STOT-SE), inhalative: |              |           |                   |                        |  | Target organ(s): respiratory system, May cause respiratory irritation. |

| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | LOAEL | 1   | mg/m <sup>3</sup> | Rat | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Target organ(s): respiratory system |
|---|-------|-----|-------------------|-----|--|-------------------------------------|
| Symptoms:   |       |     |                   |     |  | breathing difficulties              |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL | 0,2 | mg/m <sup>3</sup> | Rat | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Analogous conclusion       |

**4,4'-methylenediphenyl diisocyanate**

| Toxicity / effect   | Endpo<br>int | Value | Unit              | Organis<br>m           | Test method  | Notes  |
|---|--------------|-------|-------------------|------------------------|--|--|
| Acute toxicity, by oral route:  | LD50         | >2000 | mg/kg             | Rat                    | Regulation (EC) 440/2008 B.1 (ACUTE ORAL TOXICITY)           | Analogous conclusion   |
| Acute toxicity, by dermal route:  | LD50         | >9400 | mg/kg             | Rabbit                 | OECD 402 (Acute Dermal Toxicity)                             | Analogous conclusion   |
| Acute toxicity, by inhalation:  | LC50         | 0,368 | mg/l/4h           | Rat                    | OECD 403 (Acute Inhalation Toxicity)                         | Aerosol, Does not conform with EU classification.                  |
| Acute toxicity, by inhalation:  | LC50         | 1,5   | mg/l/4h           |                        |  | Aerosol, Expert judgement.   |
| Skin corrosion/irritation:  |              |       |                   | Rabbit                 | OECD 404 (Acute Dermal Irritation/Corrosion)                 | Skin Irrit. 2, Analogous conclusion                                |
| Respiratory or skin sensitisation:                                      |              |       |                   | Guinea pig             |  | Yes (inhalation)   |
| Respiratory or skin sensitisation:                                      |              |       |                   | Mouse                  | OECD 429 (Skin Sensitisation - Local Lymph Node Assay)       | Skin Sens. 1   |
| Germ cell mutagenicity:   |              |       |                   | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test)                   | Negative, Analogous conclusion                                     |
| Germ cell mutagenicity:   |              |       |                   | Rat                    | OECD 474 (Mammalian Erythrocyte Micronucleus Test)           | Negative   |
| Germ cell mutagenicity:   |              |       |                   | Rat                    | OECD 489 (In Vivo Mammalian Alkaline Comet Assay)            | Negative   |
| Carcinogenicity:  |              |       |                   | Rat                    | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Analogous conclusion, Carc. 2                             |
| Reproductive toxicity:  | NOAEL        | 4-12  | mg/m <sup>3</sup> | Rat                    | OECD 414 (Prenatal Developmental Toxicity Study)             | Aerosol, Analogous conclusion                                      |
| Specific target organ toxicity - single exposure (STOT-SE), inhalative: |              |       |                   |                        |  | May cause respiratory irritation.                                  |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | LOAEL        | 1     | mg/m <sup>3</sup> | Rat                    | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Analogous conclusion, Target organ(s): respiratory system |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL        | 0,2   | mg/m <sup>3</sup> | Rat                    | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Analogous conclusion, Target organ(s): respiratory system |

**o-(p-isocyanatobenzyl)phenyl isocyanate**

| Toxicity / effect                | Endpo<br>int | Value | Unit    | Organis<br>m | Test method  | Notes  |
|----------------------------------|--------------|-------|---------|--------------|--|--|
| Acute toxicity, by oral route:   | LD50         | >2000 | mg/kg   | Rat          | Regulation (EC) 440/2008 B.1 (ACUTE ORAL TOXICITY) | Analogous conclusion   |
| Acute toxicity, by dermal route: | LD50         | >9400 | mg/kg   | Rabbit       | OECD 402 (Acute Dermal Toxicity)                   | Analogous conclusion   |
| Acute toxicity, by inhalation:   | LC50         | 0,387 | mg/l/4h | Rat          |  | Aerosol, Does not conform with EU classification.                            |
| Acute toxicity, by inhalation:   | ATE          | 1,5   | mg/l/4h |              |  | Aerosol, Expert judgement.   |
| Skin corrosion/irritation:       |              |       |         | Rabbit       | OECD 404 (Acute Dermal Irritation/Corrosion)       | Skin Irrit. 2, Analogous conclusion  |
| Serious eye damage/irritation:   |              |       |         | Rabbit       | OECD 405 (Acute Eye Irritation/Corrosion)          | Not irritant, Analogous conclusion, Does not conform with EU classification. |

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|   |       |      |                   |                        |  |  |
|---|-------|------|-------------------|------------------------|--|--|
| Respiratory or skin sensitisation:                                      |       |      |                   | Guinea pig             | OECD 406 (Skin Sensitisation)                                | No (skin contact), Analogous conclusion  |
| Respiratory or skin sensitisation:                                      |       |      |                   | Guinea pig             |  | Yes (inhalation), Analogous conclusion   |
| Respiratory or skin sensitisation:                                      |       |      |                   | Mouse                  | OECD 429 (Skin Sensitisation - Local Lymph Node Assay)       | Yes (skin contact), Analogous conclusion   |
| Germ cell mutagenicity:   |       |      |                   | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test)                   | Negative, Analogous conclusion   |
| Germ cell mutagenicity:   |       |      |                   | Rat                    | OECD 474 (Mammalian Erythrocyte Micronucleus Test)           | Negative, Analogous conclusion male  |
| Carcinogenicity:  |       |      |                   | Rat                    | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Analogous conclusion, Carc. 2   |
| Reproductive toxicity:  | NOAEL | 4-12 | mg/kg             | Rat                    | OECD 414 (Prenatal Developmental Toxicity Study)             | Aerosol, Analogous conclusion  |
| Symptoms:   |       |      |                   |                        |  | mucous membrane irritation, breathing difficulties, coughing, asthmatic symptoms |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL | 0,2  | mg/m <sup>3</sup> | Rat                    | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Analogous conclusion, Target organ(s): respiratory system               |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | LOAEL | 1    | mg/m <sup>3</sup> | Rat                    | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Analogous conclusion, Target organ(s): respiratory system               |

2,2'-methylenebis(phenyl diisocyanate)

| Toxicity / effect                  | Endpoint | Value | Unit    | Organism               | Test method  | Notes   |
|------------------------------------|----------|-------|---------|------------------------|--|---|
| Acute toxicity, by oral route:     | LD50     | >2000 | mg/kg   | Rat                    | Regulation (EC) 440/2008 B.1 (ACUTE ORAL TOXICITY)           | Analogous conclusion                              |
| Acute toxicity, by dermal route:   | LD50     | >9400 | mg/kg   | Rabbit                 | OECD 402 (Acute Dermal Toxicity)                             | Analogous conclusion                              |
| Acute toxicity, by inhalation:     | LC50     | 0,527 | mg/l/4h | Rat                    | OECD 403 (Acute Inhalation Toxicity)                         | Aerosol, Does not conform with EU classification. |
| Acute toxicity, by inhalation:     | ATE      | 1,5   | mg/l    |                        |  | Aerosol, Expert judgement                         |
| Skin corrosion/irritation:         |          |       |         | Rabbit                 | OECD 404 (Acute Dermal Irritation/Corrosion)                 | Skin Irrit. 2                                     |
| Serious eye damage/irritation:     |          |       |         | Rabbit                 | OECD 405 (Acute Eye Irritation/Corrosion)                    | Slightly irritant                                 |
| Respiratory or skin sensitisation: |          |       |         | Guinea pig             |  | Yes (inhalation), Analogous conclusion            |
| Respiratory or skin sensitisation: |          |       |         | Mouse                  | OECD 429 (Skin Sensitisation - Local Lymph Node Assay)       | Yes (skin contact)                                |
| Germ cell mutagenicity:            |          |       |         | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test)                   | Negative  |
| Germ cell mutagenicity:            |          |       |         | Rat                    | OECD 474 (Mammalian Erythrocyte Micronucleus Test)           | Negative, Analogous conclusion                    |
| Carcinogenicity:                   |          |       |         | Rat                    | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Analogous conclusion, Aerosol, Carc. 2            |

|   |       |      |                   |     |  |  |
|---|-------|------|-------------------|-----|--|--|
| Reproductive toxicity:  | NOAEL | 4-12 | mg/m <sup>3</sup> | Rat | OECD 414 (Prenatal Developmental Toxicity Study)             | No indications of such an effect., Aerosol, Analogous conclusion   |
| Symptoms:   |       |      |                   |     |  | respiratory distress, coughing, mucous membrane irritation         |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL | 0,2  | mg/m <sup>3</sup> | Rat | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Target organ(s): respiratory system, Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | LOAEL | 1    | mg/m <sup>3</sup> | Rat | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Aerosol, Target organ(s): respiratory system, Analogous conclusion |

11.2. Information on other hazards

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

SECTION 12: Ecological information

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

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| Toxicity / effect                         | Endpoint | Time | Value | Unit | Organism | Test method | Notes   |
|---|----------|------|-------|------|----------|-------------|---|
| 12.1. Toxicity to fish:                   |          |      |       |      |          |             | n.d.a.  |
| 12.1. Toxicity to daphnia:                |          |      |       |      |          |             | n.d.a.  |
| 12.1. Toxicity to algae:                  |          |      |       |      |          |             | n.d.a.  |
| 12.2. Persistence and degradability:      |          |      |       |      |          |             | With water at the interface, transforms slowly with formation of CO <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. |
| 12.3. Bioaccumulative potential:          |          |      |       |      |          |             | n.d.a.  |
| 12.4. Mobility in soil:                   |          |      |       |      |          |             | n.d.a.  |
| 12.5. Results of PBT and vPvB assessment: |          |      |       |      |          |             | n.d.a.  |
| 12.6. Endocrine disrupting properties:    |          |      |       |      |          |             | Does not apply to mixtures.   |
| 12.7. Other adverse effects:              |          |      |       |      |          |             | No information available on other adverse effects on the environment.   |

Diphenylmethanediisocyanate, isomers and homologues

| Toxicity / effect | Endpoint  | Time | Value | Unit  | Organism     | Test method                                | Notes |
|-------------------|-----------|------|-------|-------|--------------|--|-------|
| Other organisms:  | NOEC/NOEL | 14d  | >1000 | mg/kg | Avena sativa | OECD 208 (Terrestrial Plants, Growth Test) |       |



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|  |            |     |        |                        |                         |  |  |
|--|------------|-----|--------|------------------------|-------------------------|--|--|
| 12.1. Toxicity to fish:                  | LC50       | 96h | >1000  | mg/l                   | Brachydanio rerio       | OECD 203 (Fish, Acute Toxicity Test)   | Analogous conclusion   |
| 12.1. Toxicity to daphnia:               | EC50       | 24h | >1000  | mg/l                   | Daphnia magna           | OECD 202 (Daphnia sp. Acute Immobilisation Test)   | Analogous conclusion   |
| 12.1. Toxicity to daphnia:               | NOEC/N OEL | 21d | >10    | mg/l                   | Daphnia magna           | OECD 202 (Daphnia sp. Acute Immobilisation Test)   | Analogous conclusion   |
| 12.1. Toxicity to algae:                 | ErC50      | 72h | >1640  | mg/l                   | Scenedesmus subspicatus | OECD 201 (Alga, Growth Inhibition Test)  | Analogous conclusion   |
| 12.2. Persistence and degradability:     |            | 28d | 0      | %                      |                         | OECD 302 C (Inherent Biodegradability - Modified MITI Test (II))                         | Not biodegradable, Analogous conclusion, According to experience available to date, polycarbamide is inert and non-degradable. With water at the interface, transforms slowly with formation of CO2 into a firm, insoluble reaction product with a high melting point (polycarbamide). |
| 12.3. Bioaccumulative potential:         | BCF        | 28d | 200    |                        | Cyprinus caprio         | OECD 305 (Bioconcentration - Flow-Through Fish Test)                                     | Not to be expected, Analogous conclusion   |
| 12.4. Mobility in soil:                  | H (Henry)  |     | 0,0229 | Pa*m <sup>3</sup> /mol |                         |  |  |
| 12.5. Results of PBT and vPvB assessment |            |     |        |                        |                         |  | No PBT substance, No vPvB substance  |
| Toxicity to bacteria:                    | EC50       | 3h  | >100   | mg/l                   | activated sludge        | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | Analogous conclusion   |
| Other organisms:                         | NOEC/N OEL | 14d | >1000  | mg/kg                  | Avena sativa            | OECD 208 (Terrestrial Plants, Growth Test)   | Analogous conclusion   |
| Other organisms:                         | NOEC/N OEL | 14d | >1000  | mg/kg                  | Lactuca sativa          | OECD 208 (Terrestrial Plants, Growth Test)   | Analogous conclusion   |
| Toxicity to annelids:                    | NOEC/N OEL | 14d | >1000  | mg/kg                  | Eisenia foetida         | OECD 207 (Earthworm, Acute Toxicity Tests)   | Analogous conclusion   |

| 2,2'-methylenediphenyl diisocyanate      |            |      |        |                        |                   |  |                                     |
|--|------------|------|--------|------------------------|-------------------|--|-------------------------------------|
| Toxicity / effect                        | Endpoint   | Time | Value  | Unit                   | Organism          | Test method                                      | Notes                               |
| 12.5. Results of PBT and vPvB assessment |            |      |        |                        |                   |  | No PBT substance, No vPvB substance |
| 12.4. Mobility in soil:                  | H (Henry)  |      | 0,0229 | Pa*m <sup>3</sup> /mol |                   |  |                                     |
| 12.1. Toxicity to fish:                  | LC50       | 96h  | >1000  | mg/l                   | Brachydanio rerio | OECD 203 (Fish, Acute Toxicity Test)             | Analogous conclusion                |
| 12.1. Toxicity to daphnia:               | NOEC/N OEL | 21d  | >10    | mg/l                   | Daphnia magna     | OECD 202 (Daphnia sp. Acute Immobilisation Test) | Analogous conclusion                |

|                                      |            |     |       |       |                         |  |  |
|--------------------------------------|------------|-----|-------|-------|-------------------------|--|--|
| 12.1. Toxicity to daphnia:           | EC50       | 24h | >1000 | mg/l  | Daphnia magna           | OECD 202 (Daphnia sp. Acute Immobilisation Test)   | Analogous conclusion   |
| 12.1. Toxicity to algae:             | EC50       | 72h | >1640 | mg/l  | Scenedesmus subspicatus | OECD 201 (Alga, Growth Inhibition Test)  | Analogous conclusion   |
| 12.2. Persistence and degradability: |            | 28d | 0     | %     | activated sludge        | 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. Analogous conclusion |
| 12.3. Bioaccumulative potential:     | Log Pow    |     | 5,22  |       |                         |  | A notable biological accumulation potential has to be expected (LogPow > 3).   |
| 12.3. Bioaccumulative potential:     | BCF        | 28d | 200   |       | Cyprinus caprio         | OECD 305 (Bioconcentration - Flow-Through Fish Test)                                     | Not to be expected, Analogous conclusion   |
| Toxicity to bacteria:                | EC50       | 3h  | >100  | mg/l  | activated sludge        | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | Analogous conclusion   |
| Other organisms:                     | NOEC/N OEL | 14d | >1000 | mg/kg | Avena sativa            | OECD 208 (Terrestrial Plants, Growth Test)   | Analogous conclusion   |
| Other organisms:                     | NOEC/N OEL | 14d | >1000 | mg/kg | Lactuca sativa          | OECD 208 (Terrestrial Plants, Growth Test)   | Analogous conclusion   |
| Toxicity to annelids:                | NOEC/N OEL | 14d | >1000 | mg/kg | Eisenia foetida         | OECD 207 (Earthworm, Acute Toxicity Tests)   | Analogous conclusion   |

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**For the substance / mixture / residual amounts**

EC disposal code no.:  
 The waste codes are recommendations based on the scheduled use of this product. Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)  
 08 04 09 waste adhesives and sealants containing organic solvents or other hazardous substances  
 08 05 01 waste isocyanates  
 Recommendation:  
 Sewage disposal shall be discouraged.  
 Pay attention to local and national official regulations.  
 E.g. suitable incineration plant.  
 Hardened product:  
 E.g. dispose at suitable refuse site.

**For contaminated packing material**

Pay attention to local and national official regulations.  
 Empty container completely.  
 Uncontaminated packaging can be recycled.  
 Dispose of packaging that cannot be cleaned in the same manner as the substance.  
 15 01 10 packaging containing residues of or contaminated by hazardous substances

**SECTION 14: Transport information**

**General statements**

14.1. UN number or ID number: n.a.  
**Transport by road/by rail (ADR/RID)**  
 14.2. UN proper shipping name:  
 14.3. Transport hazard class(es): n.a.  
 14.4. Packing group: n.a.  
 Classification code: n.a.  
 LQ: n.a.  
 14.5. Environmental hazards: Not applicable  
 Tunnel restriction code:

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II  
 Revision date / version: 01.11.2021 / 0008  
 Replacing version dated / version: 03.08.2021 / 0007  
 Valid from: 01.11.2021  
 PDF print date: 01.11.2021  
 COSMO® PU-265.110

(COSMOPUR 800 - Härter)

#### Transport by sea (IMDG-code)

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

#### Transport by air (IATA)

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

#### 14.6. Special precautions for user

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

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

Non-dangerous material according to Transport Regulations.

### SECTION 15: Regulatory information

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

Observe restrictions:

Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!  
 Regulation (EC) No 1907/2006, Annex XVII  
 Diphenylmethanediisocyanate, isomeres and homologues  
 4,4'-methylenebisphenyl diisocyanate  
 o-(p-isocyanatobenzyl)phenyl isocyanate  
 2,2'-methylenebisphenyl diisocyanate  
 Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!  
 Comply with trade association/occupational health regulations.

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

#### 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

### SECTION 16: Other information

Revised sections: 1-16  
 These details refer to the product as it is delivered.  
 Employee instruction/training in handling hazardous materials is required.

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

| Classification in accordance with regulation (EC) No. 1272/2008 (CLP) | Evaluation method used                             |
|---|--|
| 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. |
| Carc. 2, H351   | Classification according to calculation procedure. |
| STOT RE 2, H373   | Classification according to calculation procedure. |

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

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

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  
 Carc. — Carcinogenicity  
 STOT RE — Specific target organ toxicity - repeated exposure

#### Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.  
 Guidelines for the preparation of safety data sheets as amended (ECHA).  
 Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).  
 Safety data sheets for the constituent substances.  
 ECHA Homepage - Information about chemicals.  
 GESTIS Substance Database (Germany).  
 German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).

EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.  
 National Lists of Occupational Exposure Limits for each country as amended.  
 Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

### Any abbreviations and acronyms used in this document:

acc., acc. to according, according to  
 ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 AOX Adsorbable organic halogen compounds  
 approx. approximately  
 Art., Art. no. Article number  
 ASTM ASTM International (American Society for Testing and Materials)  
 ATE Acute Toxicity Estimate  
 BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)  
 BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)  
 BCF Bioconcentration factor  
 BSEF The International Bromine Council  
 bw body weight  
 CAS Chemical Abstracts Service  
 CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)  
 CMR carcinogenic, mutagenic, reproductive toxic  
 DMEL Derived Minimum Effect Level  
 DNEL Derived No Effect Level  
 DOC Dissolved organic carbon  
 dw dry weight  
 e.g. for example (abbreviation of Latin 'exempli gratia'), for instance  
 EbCx, EyCx, EbLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)  
 EC European Community  
 ECHA European Chemicals Agency  
 ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect  
 EEC European Economic Community  
 EINECS European Inventory of Existing Commercial Chemical Substances  
 ELINCS European List of Notified Chemical Substances  
 EN European Norms  
 EPA United States Environmental Protection Agency (United States of America)  
 ErCx, EpuCx, Erlx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)  
 etc. et cetera  
 EU European Union  
 EVAL Ethylene-vinyl alcohol copolymer  
 Fax. Fax number  
 gen. general  
 GHS Globally Harmonized System of Classification and Labelling of Chemicals  
 GWP Global warming potential  
 Koc Adsorption coefficient of organic carbon in the soil  
 Kow octanol-water partition coefficient  
 IARC International Agency for Research on Cancer  
 IATA International Air Transport Association  
 IBC (Code) International Bulk Chemical (Code)  
 IMDG-code International Maritime Code for Dangerous Goods  
 incl. including, inclusive  
 IUCLID International Uniform Chemical Information Database  
 IUPAC International Union for Pure Applied Chemistry  
 LC50 Lethal Concentration to 50 % of a test population  
 LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)  
 Log Koc Logarithm of adsorption coefficient of organic carbon in the soil  
 Log Kow, Log Pow Logarithm of octanol-water partition coefficient  
 LQ Limited Quantities  
 MARPOL International Convention for the Prevention of Marine Pollution from Ships  
 n.a. not applicable  
 n.av. not available  
 n.c. not checked  
 n.d.a. no data available  
 NIOSH National Institute for Occupational Safety and Health (USA)  
 NLP No-longer-Polymer  
 NOEC, NOEL No Observed Effect Concentration/Level  
 OECD Organisation for Economic Co-operation and Development  
 org. organic  
 OSHA Occupational Safety and Health Administration (USA)  
 PBT persistent, bioaccumulative and toxic  
 PE Polyethylene  
 PNEC Predicted No Effect Concentration  
 ppm parts per million  
 PVC Polyvinylchloride  
 REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)  
 REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.  
 RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)  
 SVHC Substances of Very High Concern  
 Tel. Telephone  
 TOC Total organic carbon  
 UN RTDG United Nations Recommendations on the Transport of Dangerous Goods  
 VOC Volatile organic compounds  
 vPvB very persistent and very bioaccumulative  
 wwt wet weight

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

not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge. No responsibility.

These statements were made by:

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