

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

### 1.1 Product identifier

Trade name: ZZ® 330 Komponente A

This safety data sheet pertains to the following products:

ZZ® 330 Fire Protection Foam

ZZ-Fire Protection Foam 2K NE

UFI: V5XF-5XE7-R00K-9PW5

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

General use: Polyol compound for the production of polyurethane.  
For industrial purposes only

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

Company name: ZAPP-ZIMMERMANN GmbH

Street/POB-No.: Marconistr. 7-9

Postal Code, city: 50769 Köln

Germany

WWW: [www.z-z.de](http://www.z-z.de)

E-mail: [info@z-z.de](mailto:info@z-z.de)

Telephone: +49 (0)221-97 061-0

Telefax: +49 (0)221-97 061-928

Department responsible for information:

Lars Volkmer,

Telephone: +49 (0)221-97061-160, e-mail [Lars.Volkmer@kzim.de](mailto:Lars.Volkmer@kzim.de)

### 1.4 Emergency telephone number

**GIZ-Nord, Göttingen**

**Telephone: +49 551-19240**

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

Carc. 2; H351 Suspected of causing cancer.

Repr. 2; H361f Suspected of damaging fertility.

### 2.2 Label elements

**Labelling (CLP)**



Signal word:

**Warning**

Hazard statements:	H351	Suspected of causing cancer.
	H361f	Suspected of damaging fertility.
Precautionary statements:	P201	Obtain special instructions before use.
	P280	Wear protective gloves/protective clothing/eye protection.
	P308+P313	IF exposed or concerned: Get medical advice/attention.
	P501	Dispose of contents/container to hazardous or special waste collection point.

**Special labelling**

Text for labelling: Contains Melamine

**2.3 Other hazards**

Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:

No data available

**SECTION 3: Composition/information on ingredients**

3.1 Substances: not applicable

**3.2 Mixtures**

Chemical characterisation: Mixture on the basis of Polyether polyol.

Hazardous ingredients:

Identifiers	Designation Classification	Content
EC No. 203-615-4 CAS 108-78-1	Melamine (SVHC) Carc. 2; H351. Repr. 2; H361f. STOT RE 2; H373.	< 10 %

Full text of H- and EUH-statements: see section 16.

Additional information: Contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: Melamine (Equivalent level of concern having probable serious effects to human health (Article 57(f) - human health); Equivalent level of concern having probable serious effects to the environment (Article 57(f) - environment))

Contains Aluminium hydroxide, pentaerythritol, Diiron trioxide.

The maximum workplace exposure limits are, where necessary, listed in section 8.

**SECTION 4: First aid measures****4.1 Description of first aid measures**

General information:	If medical advice is needed, have product container or label at hand. Take off contaminated clothing and wash it before reuse.
In case of inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if problems persist.
Following skin contact:	Immediately clean with water and soap and, if available, apply a generous amount of polyethylene glycol 400. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Seek medical attention.

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

No data available

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

Product causes irritation of respiratory tracts and may possibly increase sensitivity of skin and respiratory tracts. Treatment of the acute irritation or bronchial narrowing is mainly symptomatic. Depending on the scale of exposition, as well as aches and pains resulting, long-term medical care may be required.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media:

Foam, extinguishing powder, carbon dioxide  
In case of large fires: water spray jet

Extinguishing media which must not be used for safety reasons:

Full water jet

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

May form dangerous gases and vapours in case of fire.  
Furthermore, there may develop: nitrogen oxides (NOx), carbon monoxide and carbon dioxide

### 5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

Heating causes rise in pressure with risk of bursting.  
Cool endangered containers with water spray and, if possible, remove from danger zone.  
Remove persons not involved upwind.  
Do not allow water used to extinguish fire to enter drains, ground or waterways.  
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

## SECTION 6: Accidental release measures

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

Avoid exposure. Do not breathe mist/vapours/spray. Avoid contact with the substance.  
If possible, eliminate leakage. Provide adequate ventilation.  
Wear appropriate protective equipment. Keep unprotected people away.  
Take off contaminated clothing and wash it before reuse.

### 6.2 Environmental precautions

Do not allow to penetrate into soil, waterbodies or drains.  
If necessary notify appropriate authorities.

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

Take up mechanically, placing in appropriate containers for disposal. Final cleaning.

Additional information: Special danger of slipping by leaking/spilling product.

### 6.4 Reference to other sections

Refer additionally to section 8 and 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advices on safe handling: Obtain special instructions before use.

Provide adequate ventilation, and local exhaust as needed.

Avoid contact with skin and eyes. Wear appropriate protective equipment.

Do not breathe mist/vapours/spray. Take off contaminated clothing and wash it before reuse. Have eye wash bottle or eye rinse ready at work place.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Precautions against fire and explosion:

Keep away from heat.

When handling larger quantities, take precautionary measures against electrostatic charging.

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

Requirements for storerooms and containers:

Keep containers tightly closed and at a temperature between 5 °C and 30 °C. Keep in a cool, well-ventilated place. Keep container dry. Protect from humidity and water.

Hints on joint storage: Keep away from food, drink and animal feedingstuffs.

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Additional information: Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

### Personal protection equipment

#### Occupational exposure controls

Respiratory protection: Respiratory protection must be worn whenever the WEL levels have been exceeded.

Use combination filter type A2-P2 according to EN 14387.

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

Hand protection: Protective gloves according to EN ISO 374:1.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN ISO 16321-1:2022.

Body protection: Wear suitable protective clothing.

General protection and hygiene measures:  
Obtain special instructions before use.  
Avoid contact with the substance.  
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.  
Take off contaminated clothing and wash it before reuse.  
Have eye wash bottle or eye rinse ready at work place.

**Environmental exposure controls**

Refer to "6.2 Environmental precautions".

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

Physical state at 20 °C and 101.3 kPa	liquid
Colour:	red brown
Odour:	characteristic
Odour threshold:	No data available
Melting point/freezing point:	not determined
Initial boiling point and boiling range:	not determined
Flammability:	not determined
Upper/lower flammability or explosive limits:	LEL (Lower Explosion Limit): not applicable UEL (Upper Explosive Limit): not applicable
Flash point/flash point range:	not applicable
Decomposition temperature:	No data available
pH:	8.3
Viscosity, dynamic:	not relevant
Water solubility:	practically insoluble
Partition coefficient: n-octanol/water:	not determined
Vapour pressure:	at 25 °C: $\leq 0.00001$ kPa
Density:	approx. 1.3 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

**9.2 Other information**

Explosive properties:	No data available
Oxidizing characteristics:	No data available
Auto-ignition temperature:	not applicable
Bulk density:	not applicable
Evaporation rate:	No data available

**SECTION 10: Stability and reactivity****10.1 Reactivity**

Refer to subsection "Possibility of hazardous reactions".

## 10.2 Chemical stability

Stable under recommended storage conditions.

## 10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

## 10.4 Conditions to avoid

Protect from moisture contamination. Protect from direct sunlight. Protect from frost.  
Keep away from heat sources, sparks and open flames.

## 10.5 Incompatible materials

No data available

## 10.6 Hazardous decomposition products

No decomposition when used properly.

Thermal decomposition: No data available

# SECTION 11: Toxicological information

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

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Lack of data.

Serious eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Carc. 2; H351 = Suspected of causing cancer.

Reproductive toxicity: Repr. 2; H361f = Suspected of damaging fertility.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

## 11.2 Information on other hazards

Endocrine disrupting properties:

No data available

Other information:

No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

Further details: No data available

### 12.2 Persistence and degradability

Further details: No data available

### 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:  
not determined

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

No data available

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

General information: Do not allow to penetrate into soil, waterbodies or drains.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste key number: 08 04 09\* = Waste adhesives and sealants containing organic solvents or other dangerous substances

\* = Evidence for disposal must be provided.

Recommendation: Dispose of waste according to applicable legislation.

#### Package

Waste key number: 15 01 02 = Plastic packaging

Recommendation: Dispose of waste according to applicable legislation.  
Handle contaminated packages in the same way as the substance itself.  
Non-contaminated packages may be recycled.

## SECTION 14: Transport information

### 14.1 UN number or ID number

ADR/RID, ADN, IMDG, IATA-DGR:  
not applicable

## 14.2 UN proper shipping name

ADR/RID, ADN, IMDG, IATA-DGR:

Not restricted

## 14.3 Transport hazard class(es)

ADR/RID, ADN, IMDG, IATA-DGR:

not applicable

## 14.4 Packing group

ADR/RID, ADN, IMDG, IATA-DGR:

not applicable

## 14.5 Environmental hazards

Dangerous for the environment:

Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.

Marine pollutant - IMDG: no

## 14.6 Special precautions for user

No dangerous good in sense of these transport regulations.

## 14.7 Maritime transport in bulk according to IMO instruments

No data available

# SECTION 15: Regulatory information

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

### National regulations - EC member states

Further regulations, limitations and legal requirements:

Use restriction according to REACH annex XVII, no.: 3, 75

## 15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

# SECTION 16: Other information

Wording of the H-phrases under paragraph 2 and 3:

H351 = Suspected of causing cancer.

H361f = Suspected of damaging fertility.

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

Reason of change:

Changes in section 2: classification, labelling

Changes in section 3: Composition/information on ingredients

Changes in section 15: Regulatory information

General revision

General revision

Date of first version:

19/12/2013



Department issuing data sheet:

see section 1: Department responsible for information

Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
AS/NZS: Australian Standards/New Zealand Standards  
Carc.: Carcinogenicity  
CAS: Chemical Abstracts Service  
CFR: Code of Federal Regulations  
CLP: Classification, Labelling and Packaging  
DMEL: Derived minimal effect level  
DNEL: Derived no-effect level  
EC: European Community  
EN: European Standard  
EQ: Excepted quantities  
EU: European Union  
IATA: International Air Transport Association  
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
IMDG Code: International Maritime Dangerous Goods Code  
LEL: Lower Explosion Limit  
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
OEL: Occupational Exposure Limit Value  
OSHA: Occupational Safety and Health Administration  
PBT: Persistent, bioaccumulative and toxic  
PNEC: Predicted no-effect concentration  
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals  
Repr.: Reproductive toxicity  
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail  
STOT RE: Specific target organ toxicity - repeated exposure  
SVHC: Substance of very high concern  
TLV: Threshold Limit Value  
TRGS: Technical Rules for Hazardous Substances  
vPvB: Very persistent and very bioaccumulative  
WEL: Workplace Exposure Limit

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

### 1.1 Product identifier

Trade name: ZZ® 330 Komponente B  
Chemical name: 4,4'-Diphenylmethane diisocyanate (isomers, homologues)  
CAS-Number: 9016-87-9  
List number: 618-498-9  
UFI: 27MH-G0T9-K00X-ESYV

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

General use: Di-/poly-isocyanate component to produce polyurethanes. For industrial purposes only.

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

Company name: ZAPP-ZIMMERMANN GmbH  
Street/POB-No.: Marconistr. 7-9  
Postal Code, city: 50769 Köln  
Germany  
WWW: www.z-z.de  
E-mail: info@z-z.de  
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Telefax: +49 (0)221-97 061-928  
Department responsible for information:  
Lars Volkmer,  
Telephone: +49 (0)221-97061-160, e-mail Lars.Volkmer@kzim.de

### 1.4 Emergency telephone number

**GIZ-Nord, Göttingen**  
**Telephone: +49 551-19240**

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to EC regulation 1272/2008 (CLP)

Acute Tox. 4; H332 Harmful if inhaled.  
Skin Irrit. 2; H315 Causes skin irritation.  
Eye Irrit. 2; H319 Causes serious eye 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 SE 3; H335 May cause respiratory irritation.  
STOT RE 2; H373 May cause damage to organs (Respiratory tract) through prolonged or repeated exposure (inhalation).

## 2.2 Label elements

### Labelling (CLP)



Signal word:

**Danger**

Hazard statements:

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 (Respiratory tract) through prolonged or repeated exposure (inhalation).

Precautionary statements:

P201	Obtain special instructions before use.
P260	Do not breathe vapours and spray.
P280	Wear protective gloves/protective clothing/eye protection.
P284	In case of inadequate ventilation wear respiratory protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

### Special labelling

EUH204	Contains isocyanates. May produce an allergic reaction.
Text for labelling:	Contains 4,4'-Diphenylmethane diisocyanate (isomers, homologues). As from 24 August 2023 adequate training is required before industrial or professional use.

## 2.3 Other hazards

Persons with over-sensitive breath ways (e.g. asthma, chronic bronchitis) are not allowed to use the product due to safety regulations.

Vapours and aerosols are the main dangers to the respiratory tract.

Respiratory symptoms may still occur several hours after overexposure.

Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical characterisation: 4,4'-Diphenylmethane diisocyanate (isomers, homologues) approx. 100%

CAS-Number: 9016-87-9

List number: 618-498-9

Additional information: Contains 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8).  
The maximum workplace exposure limits are, where necessary, listed in section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General information:	If medical advice is needed, have product container or label at hand. Take off immediately all contaminated clothing and wash it before reuse.
In case of inhalation:	Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Do not allow victim to become chilled. Keep victim warm. Keep victim calm and seek medical attention immediately. If victim is at risk of losing consciousness, position and transport on their side.
Following skin contact:	Immediately clean with water and soap and, if available, apply a generous amount of polyethylene glycol 400. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently consult an ophthalmologist.
After swallowing:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Seek medical attention.

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

Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause damage to organs (Respiratory tract) through prolonged or repeated exposure (inhalation). May cause respiratory irritation.

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

Product causes irritation of respiratory tracts and may possibly increase sensitivity of skin and respiratory tracts. Treatment of the acute irritation or bronchial narrowing is mainly symptomatic. Depending on the scale of exposition, as well as aches and pains resulting, long-term medical care may be required.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media:

Foam, extinguishing powder, carbon dioxide  
In case of large fires: also water spray jet

Extinguishing media which must not be used for safety reasons:

Full water jet

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

May form dangerous gases and vapours in case of fire.  
Furthermore, there may develop: Isocyanate vapours, traces of hydrogen cyanide, nitrous fumes, carbon monoxide

### 5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information: Heating causes rise in pressure with risk of bursting.  
Cool endangered containers with water spray and, if possible, remove from danger zone.  
Remove persons not involved upwind.  
Do not allow water used to extinguish fire to enter drains, ground or waterways.  
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

## SECTION 6: Accidental release measures

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

Avoid exposure. Do not breathe vapours and spray. Avoid contact with the substance.  
If possible, eliminate leakage. Provide adequate ventilation.  
Wear appropriate protective equipment. Keep unprotected people away.  
Take off immediately all contaminated clothing and wash it before reuse.

### 6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains.  
If necessary notify appropriate authorities.

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

Take up mechanically, placing in appropriate containers for disposal. Final cleaning.

Additional information: Special danger of slipping by leaking/spilling product.

### 6.4 Reference to other sections

Refer additionally to section 8 and 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advices on safe handling: Obtain special instructions before use.  
Provide adequate ventilation, and local exhaust as needed.  
Airflow should move away from persons.  
The effectiveness of the facilities must be checked at regular intervals.  
Avoid contact with skin and eyes. Wear appropriate protective equipment.  
Do not breathe vapours and spray.  
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.  
Take off immediately all contaminated clothing and wash it before reuse.  
Have eye wash bottle or eye rinse ready at work place.

Precautions against fire and explosion:

Keep away from heat.  
When handling larger quantities, take precautionary measures against electrostatic charging.

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

Requirements for storerooms and containers:

Keep in a cool, well-ventilated place. Keep container dry.  
storage temperature: < 15 °C  
Protect from humidity and water.  
Do not allow the product to enter the ground.

Hints on joint storage: keep away from: Water, acids, alkalis, amines, alcohols.  
Keep away from food, drink and animal feedingstuffs.  
Further details: Use caution when opening containers under pressure.

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Additional information: Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

### Personal protection equipment

#### Occupational exposure controls

Respiratory protection: Respiratory protection must be worn whenever the WEL levels have been exceeded.  
Use combination filter type A2-P2 according to EN 14387.

Hand protection: Protective gloves according to EN ISO 374:1.  
Glove material:  
Nitrile rubber - NBR, 0.4 mm  
Butyl caoutchouc (butyl rubber) - IIR, 0.7 mm  
Chloroprene rubber - CR, 0.5 mm  
polyvinyl chloride - PVC, 0.7 mm  
Breakthrough time: > 480 min  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN ISO 16321-1:2022.

Body protection: Wear suitable protective clothing.

General protection and hygiene measures:  
Obtain special instructions before use.  
Avoid contact with skin and eyes.  
Wear appropriate protective equipment. Do not breathe vapours and spray.  
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.  
Take off immediately all contaminated clothing and wash it before reuse.  
Have eye wash bottle or eye rinse ready at work place.

### Environmental exposure controls

Refer to "6.2 Environmental precautions".

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa liquid  
Colour: red brown  
Odour: earthy, musty  
Odour threshold: No data available

Melting point/freezing point:	No data available
Initial boiling point and boiling range:	330 °C (1.013 mbar)
Flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Flash point/flash point range:	204 °C
Auto-ignition temperature:	> 600 °C
Decomposition temperature:	No data available
pH:	No data available
Viscosity, dynamic:	at 25 °C: 600 - 700 mPa*s (DIN 53018)
Water solubility:	Reacts with water
Partition coefficient: n-octanol/water:	No data available
Vapour pressure:	at 25 °C: <= 0.01 Pa
Density:	at 20 °C: 1.24 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

## 9.2 Other information

Explosive properties:	Product is not explosive.
Oxidizing characteristics:	No data available
Auto-ignition temperature:	No data available
Evaporation rate:	No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Refer to subsection "Possibility of hazardous reactions".

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Violent reaction with amines and alcohols.  
Contact with water liberates carbon dioxide.  
Heating causes rise in pressure with risk of bursting.

### 10.4 Conditions to avoid

Protect from moisture contamination. Protect from direct sunlight. Protect from frost.  
Keep away from heat sources, sparks and open flames.

### 10.5 Incompatible materials

Water, acids, alkalis, amines, alcohols

### 10.6 Hazardous decomposition products

	No decomposition when used properly.
Thermal decomposition:	No data available

## SECTION 11: Toxicological information

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

Acute toxicity:	LC50 Rat, inhalative: 0.493 mg/L/4 h
Toxicological effects:	Acute toxicity (oral): Based on available data, the classification criteria are not met. Acute toxicity (dermal): Based on available data, the classification criteria are not met. Acute toxicity (inhalative): Acute Tox. 4; H332 = Harmful if inhaled. Skin corrosion/irritation: Skin Irrit. 2; H315 = Causes skin irritation. Serious eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation. Sensitisation to the respiratory tract: Resp. Sens. 1; H334 = May cause allergy or asthma symptoms or breathing difficulties if inhaled. Skin sensitisation: Skin Sens. 1; H317 = May cause an allergic skin reaction. Germ cell mutagenicity/Genotoxicity: Lack of data. Carcinogenicity: Carc. 2; H351 = Suspected of causing cancer. Reproductive toxicity: Lack of data. Effects on or via lactation: Lack of data. Specific target organ toxicity (single exposure): STOT SE 3; H335 = May cause respiratory irritation. Specific target organ toxicity (repeated exposure): STOT RE 2; H373 = May cause damage to organs through prolonged or repeated exposure. Aspiration hazard: Based on available data, the classification criteria are not met.

### 11.2 Information on other hazards

Endocrine disrupting properties:	No data available
Other information:	Persons with over-sensitive breath ways (e.g. asthma, chronic bronchitis) are not allowed to use the product due to safety regulations. Information about Diphenylmethane diisocyanate (isomers, homologues): A long-term studie with rats over two years with mechanically produced, inhalable aerosols (aerodyn. diametre of 95% under 5 µm) of polymer MDI (PMDI) and concentrations of 0.2, 1.0 and 6.0 mg PMDI/m <sup>3</sup> showed the following results: The group of animals exposed to the highest concentration suffered an increased incidence of lung tumours, persistent inflammatory changes to the nose, respiratory tract and lungs, and yellowish deposits in the respiratory tract and lungs. The animals in the 1.0 mg/m <sup>3</sup> group exhibited slight irritation and inflammatory changes to the nose, respiratory tract and lungs, but did not develop lung tumours and/or deposits. Animals in the 0.2 mg/m <sup>3</sup> group suffered no irritation: this concentration was therefore deemed to constitute the 'no-effect level'.



## Symptoms

In case of inhalation: Irritation of nose, throat, lung.  
Headache, throat dryness, respiratory complaints, chest pressure.  
May cause sensitization by inhalation. Susceptible persons may develop ailments and allergic reactions with some delay.  
In case of ingestion: May be harmful if swallowed.  
After contact with skin:  
In case of a prolonged contact tanning and irritating effects may occur.  
After eye contact:  
Produces for a short time a weak reddening and tumefaction of the conjunctiva as well as a weak, reversible rendering turbid of the cornea.

## SECTION 12: Ecological information

### 12.1 Toxicity

Aquatic toxicity: Information about Diphenylmethane diisocyanate (isomers, homologues):  
Bacterial toxicity:  
EC50 > 100 mg/L/3 h (OECD 209)  
Daphnia toxicity:  
EC50 Daphnia: > 1,000 mg/L/24h (OECD 202)  
chronic daphnia toxicity:  
NOEC Daphnia magna (Big water flea): > 10 mg/L/21d (OECD 202)  
Fish toxicity:  
LC50 Danio rerio (zebrafish): > 1,000 mg/L/96 h (OECD 203)  
Algae toxicity:  
ErC50 Scenedesmus subspicatus > 1,640 mg/L/72h (OECD 201)

### 12.2 Persistence and degradability

Further details: Forms carbon dioxide and turns into a hard and insoluble by-product (poly urea) on the water's edge. This reaction is intensified by surface-active substances (e.g. liquid soaps) or water soluble solvents. Based upon current knowledge, poly urea is inert and will not decompose.

### 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:  
No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

AOX reference: Product does not contain organically bound halogen (AOX).  
General information: Do not allow to penetrate into soil, waterbodies or drains.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste key number: 08 05 01\* = Waste isocyanates  
\* = Evidence for disposal must be provided.  
Recommendation: Dispose of waste according to applicable legislation.

#### Package

Waste key number: 15 01 02 = Plastic packaging  
Recommendation: Dispose of waste according to applicable legislation.  
Handle contaminated packages in the same way as the substance itself.  
Non-contaminated packages may be recycled.

## SECTION 14: Transport information

### 14.1 UN number or ID number

ADR/RID, IMDG, IATA-DGR: not applicable  
ADN: ID 9004

### 14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: Not restricted  
ADN: ID 9004, DIPHENYLMETHANE-4,4'-DIISOCYANATE

### 14.3 Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR: not applicable  
ADN: Class 9, Code: M12

### 14.4 Packing group

ADR/RID, ADN, IMDG, IATA-DGR: not applicable

### 14.5 Environmental hazards

Dangerous for the environment: Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.  
Marine pollutant - IMDG: no

### 14.6 Special precautions for user

#### Inland waterway craft (ADN)

Hazard label: -  
Transport permitted: T  
Equipment necessary: PP

No dangerous good in sense of these transport regulations.

## 14.7 Maritime transport in bulk according to IMO instruments

No data available

## SECTION 15: Regulatory information

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

#### National regulations - EC member states

Restrictions on use: REACH, annex XVII: No. 74

#### Labelling of packaging with <= 125mL content



Signal word:

**Danger**

Hazard statements:

H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351	Suspected of causing cancer.
EUH204	Contains isocyanates. May produce an allergic reaction.
P201	Obtain special instructions before use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection.
P284	In case of inadequate ventilation wear respiratory protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Further regulations, limitations and legal requirements:

Use restriction according to REACH annex XVII, no.: 3, 56, 74, 75

### 15.2 Chemical Safety Assessment

For this substance a chemical safety assessment is not required.

## SECTION 16: Other information

Reason of change: Changes in section 2: classification, labelling  
Changes in section 3: Composition/information on ingredients  
Changes in section 14: transport information  
Changes in section 15: Regulatory information  
General revision

Date of first version: 19/12/2013

Department issuing data sheet:

see section 1: Department responsible for information

**SAFETY DATA SHEET**according to Regulation (EC) No 1907/2006 (REACH) and Regulation (EU)  
2020/878**ZZ® 330 Komponente B**

Material number ZZ® 330 Komponente B

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## Abbreviations and acronyms:

Acute Tox.: Acute toxicity  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
AOX: Adsorbable Organic Halogens  
AS/NZS: Australian Standards/New Zealand Standards  
Carc.: Carcinogenicity  
CAS: Chemical Abstracts Service  
CFR: Code of Federal Regulations  
CLP: Classification, Labelling and Packaging  
DMEL: Derived minimal effect level  
DNEL: Derived no-effect level  
EC: European Community  
EC50: Effective Concentration 50%  
EN: European Standard  
EQ: Excepted quantities  
EU: European Union  
Eye Irrit.: Eye irritation  
IATA: International Air Transport Association  
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
IMDG Code: International Maritime Dangerous Goods Code  
LC50: Median lethal concentration  
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
NOEC: No Observed Effect Concentration  
OECD: Organisation for Economic Co-operation and Development  
OEL: Occupational Exposure Limit Value  
OSHA: Occupational Safety and Health Administration  
PBT: Persistent, bioaccumulative and toxic  
PNEC: Predicted no-effect concentration  
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals  
Resp. Sens.: Sensitisation to the respiratory tract  
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail  
Skin Irrit.: Skin irritation  
Skin Sens.: Skin sensitisation  
STOT RE: Specific target organ toxicity - repeated exposure  
STOT SE: Specific target organ toxicity - single exposure  
TLV: Threshold Limit Value  
TRGS: Technical Rules for Hazardous Substances  
vPvB: Very persistent and very bioaccumulative  
WEL: Workplace Exposure Limit