



# SAFETY DATA SHEET

according to Regulation (EU) No. 453/2010

**E:ISO**

## **1. Identification of the substance/mixture and of the company/undertaking**

### **1.1. Product identifier**

<b>Index-No</b>	Polymer
<b>CAS-No.</b>	9016-87-9
<b>Product code</b>	ISO 10-002-00
<b>Synonyms</b>	None.

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

<b>Use of the Substance/Preparation</b>	A component of a polyurethane system.
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### **1.3. Details of the supplier of the safety data sheet**

<b>Company/Undertaking Identification</b>	PUR-Systems GmbH Werner-von-Siemens-Str. 22 D-49124 Georgsmarienhütte Germany Tel +49 5401 8355 - 0 Fax +49 5401 8355 83 e-mail info@pursystems.de
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<b>1.4. Emergency telephone number</b>	+49 174 975 1711 +49 172 999 3193
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<b>Issuing date</b>	25.06.2013
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<b>Version</b>	REACH GHS/CLP
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## 2. Hazards identification

### 2.1. Classification of the substance or mixture

**Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP)**

Acute toxicity, inhal., Vapours, Cat. 4, H332  
Skin corrosion/irritation, Cat. 2, H315  
Serious eye damage/eye irritation, Cat. 2, H319  
Skin Sensitisation, Cat. 1, H317  
Respiratory Sensitisation, Cat. 1, H334  
Carcinogenicity, Cat. 2, H351  
Specific target organ toxicity (repeated exposure, inhalation), Cat. 2, H373inh  
Specific target organ toxicity (single exposure, inhalation), Cat. 3, H335  
Contains isocyanates. May produce an allergic reaction.

Contains isocyanates. See information supplied by the manufacturer.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Carc. Cat. 3; R40  
Xi; R36/37/38  
R42/43  
Xn; R48/20

**Additional information**

For the full text of the phrases mentioned in this Section, see Section 16.

### 2.2. Label elements



**Signal Word  
Hazard Statements**

Danger  
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.  
H373inh: May cause damage to organs through prolonged or repeated exposure if inhaled.

**Precautionary statements**

P260: Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P271: Use only outdoors or in a well-ventilated area.  
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position 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/

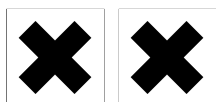


attention.  
P363: Wash contaminated clothing before reuse.

**Additional advice** Contains isocyanates. May produce an allergic reaction.

**GHS product identifier** Isocyanic acid, polymethylenepolyphenylene ester, CAS-No. 9016-87-9  
4,4'-Methylenediphenyl diisocyanate, CAS-No. 101-68-8, REACH No. 01-2119457014-47

#### Labelling according to Directives 67/548/EEC or 1999/45/EC



Xn - Harmful.  
Xi - Irritant.

**R-phrases(s)** R40: Limited evidence of a carcinogenic effect.  
R36/37/38: Irritating to eyes, respiratory system and skin.  
R42/43: May cause sensitisation by inhalation and skin contact.  
R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**S-phrases(s)** S23: Do not breathe vapour  
S24: Avoid contact with skin.  
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S37: Wear suitable gloves.  
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
S60: This material and its container must be disposed of as hazardous waste.

**Hazardous component(s) which must be listed on the label** None.

**2.3. Other hazards** No hazards to be especially mentioned.

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### 3. Composition/information on ingredients

**Chemical characterization** Isocyanates.

Components		CLP Classification	DSD/DPD Classification	Product identifier
Isocyanic acid, polymethylenepolyphenylene ester	60-100	Acute Tox. 4 H332, Skin Irrit. 2 H315, Eye Irrit. 2 H319, Resp. Sens. 1 H334, Skin Sens. 1 H317, Carc. 2 H351, STOT SE 3 H335, STOT RE 2 H373i	Xn, Xi; R-20-36/37/38-40-42/43-48/20	CAS-No.: 9016-87-9 Index-No: Polymer



4,4'-Methylenediphenyl diisocyanate	30-60	Acute Tox. 4 H332, Skin Irrit. 2 H315, Eye Irrit. 2 H319, Resp. Sens. 1 H334, Skin Sens. 1 H317, Carc. 2 H351, STOT SE 3 H335, STOT RE 2 H373i	Xn,Xi; R-20-36/37/38-40-42/43-48/20	CAS-No.: 101-68-8 Index-No: 202-966-0 REACH No.: 01-2119457014-47
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For the full text of the phrases mentioned in this Section, see Section 16.

**Hazardous impurities** None known.

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## 4. First aid measures

### 4.1. Description of first aid measures

<b>Inhalation</b>	Move to fresh air in case of accidental inhalation of vapours or decomposition products. Consult a physician for severe cases. If breathing is difficult, give oxygen.
<b>Skin contact</b>	Wash off with plenty of water. Remove contaminated clothes and shoes. If skin irritation persists, call a physician.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Protect unharmed eye. Call a physician immediately.
<b>Ingestion</b>	Rinse the mouth thoroughly with water. Consult a physician if necessary. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

**4.2. Most important symptoms and effects, both acute and delayed** Irritating to eyes, respiratory system and skin. May cause sensitisation by inhalation and skin contact. Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

**4.3. Indication of any immediate medical attention and special treatment needed** Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

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## 5. Firefighting measures

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Foam. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. High pressure inert gas, e.g. carbon dioxide jet.
<b>Extinguishing media which must not be used for safety reasons</b>	High volume water jet.

**5.2. Special hazards arising from the substance or mixture** During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds.



### 5.3. Advice for firefighters

#### Special protective equipment for firefighters

In case of fire and/or explosion do not breathe fumes. Wear self-contained breathing apparatus and protective suit.

#### Specific methods

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water mist may be used to cool closed containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

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## 6. Accidental release measures

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

#### Advice for non-emergency personnel

Any action only if without personal risk. Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours/dust. Immediately evacuate personnel to safe areas.

#### Advice for emergency responders

Any action only if without personal risk. Use personal protective equipment. Ventilate the area. Do not breathe vapours/dust. Immediately evacuate personnel to safe areas.

### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

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

Soak up with inert absorbent material. Clean up promptly by sweeping or vacuum. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Keep in suitable and closed containers for disposal.

### 6.4. Reference to other sections

See chapter 8 and 13.

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## 7. Handling and storage

### 7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Ingestion, exposure to skin and eyes and inhalation of any generated vapours should be avoided. Ensure adequate ventilation, especially in confined areas.

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

Keep at temperatures between 5 and 45 °C. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

### 7.3. Specific end use(s)

No information available.



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## 8. Exposure controls/personal protection

### 8.1. Control parameters

**Exposure limit(s)** No data is available on the product itself.

#### **4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8)**

Ireland - Occupational Exposure Limits - TWAs 0.02 mg/m<sup>3</sup> TWA (as NCO)

Ireland - Occupational Exposure Limits - STELs 0.07 mg/m<sup>3</sup> STEL (as NCO)

### 8.2. Exposure controls

**Occupational exposure controls** Ensure adequate ventilation, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice.

#### **Personal protection equipment**

*Respiratory protection* In case of insufficient ventilation, wear suitable respiratory equipment.

*Hand protection* The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. PVC or other plastic material gloves.

*Eye protection* Safety glasses with side-shields conforming to EN 166.

*Skin and body protection* Long sleeved clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Thermal hazards** No special measures required.

**Environmental exposure controls** Prevent product from entering surface water or sewage.

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## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Form</b>	Liquid.
<b>Colour</b>	Brown.
<b>Odour</b>	No information available.
<b>Odour Threshold</b>	not determined
<b>pH:</b>	not applicable
<b>Melting point/range:</b>	not determined
<b>Boiling point/range:</b>	245°C
<b>Flash point:</b>	230°C
<b>Evaporation Rate:</b>	not determined
<b>Flammability:</b>	not applicable
<b>Explosion limits:</b>	Not explosive
<b>Vapour pressure:</b>	not determined



<b>Vapor density:</b>	8,5
<b>Relative density:</b>	1,23
<b>Water solubility:</b>	Reacts with water.
<b>Partition coefficient (n-octanol/water):</b>	not determined
<b>Autoignition temperature:</b>	not determined
<b>Decomposition temperature:</b>	not determined
<b>Viscosity:</b>	200 mPas
<b>Combustion/explosion hazards:</b>	not determined
<b>Oxidizing properties:</b>	None

## 9.2. Other information

**General Product Characteristics** No information available.

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## 10. Stability and reactivity

<b>10.1. Reactivity</b>	No information available.
<b>10.2. Chemical stability</b>	No decomposition if used as directed. Stable at normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	Exothermic reaction with strong acids. Exothermal reaction with amines and alcohols. Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.
<b>10.4. Conditions to avoid</b>	Burning produces obnoxious and toxic fumes. Avoid moisture. Extremes of temperature and direct sunlight.
<b>10.5. Incompatible materials</b>	ferrous metals, alloys and galvanized surfaces Incompatible with acids and bases. Reacts violently with water. Alcohols. Amines.
<b>10.6. Hazardous decomposition products</b>	Carbon dioxide (CO <sub>2</sub> ), carbon monoxide (CO), oxides of nitrogen (NO <sub>x</sub> ), dense black smoke. Hydrogen cyanide (hydrocyanic acid). Hydrocarbons.

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## 11. Toxicological information

### 11.1. Information on toxicological effects

<b>Acute toxicity</b>	<b>Isocyanic acid, polymethylenepolyphenylene ester (CAS 9016-87-9)</b> Inhalation LC50 Rat = 490 mg/m <sup>3</sup> 4 h (NLM_CIP)
<b>Skin corrosion/irritation</b>	Causes skin irritation. Animal studies
<b>Serious eye damage/eye irritation</b>	Irritating to eyes.



<b>Respiratory / Skin Sensitisation</b>	May cause allergic respiratory reaction. May cause allergic skin reaction. Isocyanates may cause acute irritation and/or sensitisation of the respiratory system leading to tightness of the chest, wheeziness and an asthmatic condition.
<b>Carcinogenicity</b>	Possible carcinogen.
<b>Germ cell mutagenicity</b>	Classification not possible from current data.
<b>Reproductive toxicity</b>	Classification not possible from current data.
<b>Specific target organ toxicity (single exposure)</b>	May cause damage to organs (Lungs) if inhaled.
<b>Specific target organ toxicity (repeated exposure)</b>	May cause damage to organs (Lungs) through prolonged or repeated exposure if inhaled.
<b>Aspiration hazard</b>	No data available.
<b>Human experience</b>	Asthmatic appearance.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Irritating to eyes. Irritating to respiratory system. Irritating to skin.

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## **12. Ecological information**

<b>12.1. Toxicity</b>	No data available.
<b>12.2. Persistence and degradability</b>	Expected to be biodegradable.
<b>12.3. Bioaccumulative potential</b>	Bioconcentration factor (BCF): 200.
<b>12.4. Mobility in soil</b>	No data available.
<b>12.5. Results of PBT and vPvB assessment</b>	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
<b>12.6. Other adverse effects</b>	No information available.

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## **13. Disposal considerations**

### **13.1. Waste treatment methods**

<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	Dispose of as unused product.





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## 14. Transport information

ADR/RID	Not required.
IMO	Not required.
ICAO	Not required.
Further Information	Not classified as dangerous in the meaning of transport regulations.

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## 15. Regulatory information

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

Regulatory Information	None.
<b>4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8)</b>	
EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	Use restricted. See item 56. (Conditions of restrictions 27 December 2010)
EU - REACH (1907/2006) - List of Registered Substances	Present

15.2. Chemical safety assessment	not applicable
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## 16. Other information

Key or legend to abbreviations and acronyms	CLP: Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP) DNEL: Derived No Effect Level . MAK: Maximale Arbeitsplatzkonzentration. STEL: Short Term Exposure Limit
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Classification procedure	Classification according to Regulation (EU) 1272/2008 with the correlation table 67/548/EEC or 1999/45/EC (Annex VII of CLP).
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Full text of phrases referred to under sections 2 and 3	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. H373inh: May cause damage to organs through prolonged or repeated exposure if inhaled.  R20: Harmful by inhalation. R36/37/38: Irritating to eyes, respiratory system and skin. R40: Limited evidence of a carcinogenic effect.
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R42/43: May cause sensitisation by inhalation and skin contact.  
R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**Further information**

Take notice of the directions of use on the label.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.