

Safety data sheet

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BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.

Date / Revised: 25.08.2015

Version: 10.0

Product: **IsoPMDI 92140**

(ID no. 30066646/SDS_GEN_EU/EN)

Date of print 17.09.2015

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

1.1. Product identifier

IsoPMDI 92140

Chemical name: Isocyanic acid, polymethylenepolyphenylene ester (P-MDI)

CAS Number: 9016-87-9

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

Relevant identified uses: Chemical

Recommended use: polyurethane component, industrial chemicals

1.3. Details of the supplier of the safety data sheet

Company:

BASF Polyurethanes GmbH

Postfach 1140

49440 Lemfoerde, GERMANY

Telephone: +49 5443 12-2121

E-mail address: Product-Safety-Polyurethanes@basf.com

1.4. Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4 (Inhalation - vapour)
Eye Dam./Irrit. 2
Skin Corr./Irrit. 2
STOT SE 3 (irritating to respiratory system)
Skin Sens. 1
Resp. Sens. 1
Carc. 2
STOT RE 2 (Inhalation - vapour)

H315, H317, H319, H332, H334, H335, H351, H373

Specific Concentration Limits According to Regulation (EC) No 1272/2008 [CLP]

Eye Irrit. 2: $\geq 5\%$
Skin Irrit. 2: $\geq 5\%$
Resp. Sens. 1: $\geq 0.1\%$
STOT SE 3: $\geq 5\%$

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System, EU (GHS)

Pictogram:



Signal Word:

Danger

Hazard Statement:

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

Precautionary Statements (Prevention):

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P280 Wear protective gloves/protective clothing/eye protection/face protection.

P285 In case of inadequate ventilation wear respiratory protection.

Precautionary Statements (Response):

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary Statements (Storage):

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements (Disposal):

P501 Dispose of contents/container to hazardous or special waste collection point.

Labeling of special preparations (GHS):

EUH204: Contains isocyanates. May produce an allergic reaction.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: Isocyanic acid, polymethylenepolyphenylene ester (P-MDI)

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

Isocyanic acid, polymethylenepolyphenylene ester (P-MDI) (Content (W/W): 100 %)

CAS Number: 9016-87-9

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

After contact with skin, wash immediately with plenty of water. Consult a doctor if skin irritation persists.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink plenty of water, do not induce vomiting, seek medical attention.

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

Symptoms: tightness in the chest, coughing, difficulty breathing

Hazards: Symptoms can appear later.

Information on: 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate

Hazards: Respiratory sensitization may result in allergic (asthma-like) signs in the lower respiratory tract including wheezing, shortness of breath and difficulty breathing, the onset of which may be delayed. Repeated inhalation of high concentrations may cause lung damage, including reduced lung function, which may be permanent. Substances eliciting lower respiratory tract irritation may worsen the asthma-like reactions that may be produced by product exposures.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary edema.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:

dry powder, carbon dioxide, alcohol-resistant foam, water spray

5.2. Special hazards arising from the substance or mixture

Carbon dioxide, carbon monoxide, hydrogen cyanide; hydrocyanic acid, nitrogen oxides, isocyanate
The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters

Special protective equipment:

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

Further information:

Keep containers cool by spraying with water if exposed to fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Ensure adequate ventilation. Use breathing apparatus if exposed to vapours/dust/aerosol.

6.2. Environmental precautions

Do not empty into drains. Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

For large amounts: Pump off product.

For residues: Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder). Dispose of absorbed material in accordance with regulations.

Neutralize with a solution of 5 - 10 % Sodium carbonate, 0,2 - 2 % detergents and 90 - 95 % water.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Provide suitable exhaust ventilation at the processing machines. Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. When handling heated product, vapours of the product should be ventilated, and respiratory protection used. Wear respiratory protection when spraying. Danger of bursting when sealed gastight. Protect against moisture. Products freshly manufactured from isocyanates can contain incompletely reacted isocyanates and other dangerous substances. Clean up contamination as soon as they occur. Provide basic employee training to prevent/minimize exposures.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from water. Segregate from foods and animal feeds. Segregate from acids and bases.

Suitable materials for containers: Carbon steel (Iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), tinned carbon steel (Tinplate), Stainless steel 1.4301 (V2)

Unsuitable materials for containers: Paper/Fibreboard, board

Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Protect against moisture. Formation of CO₂ and build up of pressure possible. Danger of bursting when sealed gastight.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

101-68-8: 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate

PNEC

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

DNEL

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Respiratory protection in case of vapour/aerosol release. Combination filter for gases/vapours of organic compounds and solid and liquid particles (f.e. EN 14387 Type A-P2)

Hand protection:

Chemical resistant protective gloves (EN 374)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):

butyl rubber (butyl) - 0.7 mm coating thickness

nitrile rubber (NBR) - 0.4 mm coating thickness

chloroprene rubber (CR) - 0.5 mm coating thickness

Unsuitable materials

polyvinylchloride (PVC) - 0.7 mm coating thickness

Polyethylene-Laminate (PE laminate) - ca. 0.1 mm coating thickness

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

safety shoes (e.g. according to EN 20346)

General safety and hygiene measures

Do not breathe vapour/spray. With products freshly manufactured from isocyanates body protection and chemical resistant protective gloves is recommended. Wearing of closed work clothing is required additionally to the stated personal protection equipment. No eating, drinking, smoking or tobacco use at the place of work. Take off immediately all contaminated clothing. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid
Colour:	brown
Odour:	earthy, musty
Odour threshold:	not applicable
pH value:	not applicable
Freezing point:	< 10 °C
Boiling point:	330 °C (1,013 mbar)
Flash point:	> 204 °C
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.
Flammability:	not flammable
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit:	For liquids not relevant for classification and labelling.
Ignition temperature:	> 600 °C
Vapour pressure:	< 0.01 Pa (25 °C)
Density:	1.23 g/cm ³ (25 °C)
Relative density:	approx. 1.22 (20 °C)
Relative vapour density (air):	8.5 (20 °C)
Solubility in water:	Reacts with water., hydrolyzes
Partitioning coefficient n-octanol/water (log K _{ow}):	not applicable
Thermal decomposition:	> 230 °C

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Viscosity, dynamic: 170 - 250 mPa.s
(25 °C)

(DIN 53018)

Explosion hazard: not explosive

9.2. Other information

Miscibility with water:

Reacts with water.

Other Information:

If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: No corrosive effect on metal.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Temperature: < 15 °C

Avoid moisture.

10.5. Incompatible materials

Substances to avoid:

acids, alcohols, amines, water, Alkalines

10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. Of moderate toxicity after short-term inhalation.

Experimental/calculated data:

LD50 rat (oral): > 10,000 mg/kg

LC50 rat (by inhalation): approx. 0.493 mg/l 4 h

LD50 rabbit (dermal): > 10,000 mg/kg

Irritation

Assessment of irritating effects:

Eye contact causes irritation. Skin contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation: Irritant.

Serious eye damage/irritation: Irritant.

Respiratory/Skin sensitization

Assessment of sensitization:

The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible.

Germ cell mutagenicity

Assessment of mutagenicity:

The substance was mutagenic in various test systems with microorganisms and cell cultures; however, these results could not be confirmed in tests with mammals.

Carcinogenicity

Assessment of carcinogenicity:

Indication of possible carcinogenic effect in animal tests. However, the relevance of this result for humans is unclear. The substance was tested in form of respirable aerosols.

Reproductive toxicity

Assessment of reproduction toxicity:

Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

Developmental toxicity

Assessment of teratogenicity:

Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Experiences in humans

Experimental/calculated data:

coughing, dyspnea, tightness in the chest, temporary influenzal symptoms:

Can severely irritate the eyes and respiratory tract depending upon the concentration.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

The substance may cause damage to the lung even after repeated inhalation of low doses, as shown in animal studies.

Aspiration hazard

No aspiration hazard expected.

SECTION 12: Ecological Information**12.1. Toxicity**

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. No toxic effects occur within the range of solubility.

Toxicity to fish:

LC0 (96 h) > 1,000 mg/l, Fish (other)

Aquatic invertebrates:

EC0 (24 h) > 500 mg/l, daphnia (other)

Aquatic plants:

EC0 (72 h) 1,640 mg/l, Scenedesmus subspicatus (OECD Guideline 201)

12.2. Persistence and degradabilityAssessment biodegradation and elimination (H₂O):

Poorly biodegradable.

Elimination information:

< 10 % BOD of the ThOD (28 d) (OECD Guideline 302 C) (aerobic, activated sludge) Under test conditions no biodegradation observed.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

Does not significantly accumulate in organisms.

Bioaccumulation potential:

Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:

Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria.

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

Other ecotoxicological advice:

Do not release untreated into natural waters. Do not allow to enter soil, waterways or waste water channels.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Incinerate in suitable incineration plant, observing local authority regulations.

Dispose of isocyanate waste in dry containers and never mix together with other wastes (reaction, dangerous pressure build up).

Waste key:

08 05 01 waste isocyanates

Contaminated packaging:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

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	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Inland waterway transport

ADN

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known
Transport in inland waterway vessel:	No dangerous good in inland waterway vessel Environmental hazards: no

Sea transport

IMDG

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Air transport

IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

14.1. UN number

See corresponding entries for "UN number" for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	IBC
Shipment approved:	1
Pollution name:	Polymethylene polyphenyl isocyanate
Pollution category:	Y
Ship Type:	2

SECTION 15: Regulatory Information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 56

If it is intended to use materials for the manufacture of consumer goods (e. g. products which will come into contact with foodstuffs or with the skin, toys) or medical products, national and international regulations have to be observed. Where no regulations exist, consumer goods or medical products must at least comply with European legislation. We recommend contacting our Sales and our Product Safety departments.

15.2. Chemical Safety Assessment

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

SECTION 16: Other Information

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Acute Tox.	Acute toxicity
Eye Dam./Irrit.	Serious eye damage/eye irritation
Skin Corr./Irrit.	Skin corrosion/irritation
STOT SE	Specific target organ toxicity — single exposure
Skin Sens.	Skin sensitization
Resp. Sens.	Respiratory sensitization
Carc.	Carcinogenicity
STOT RE	Specific target organ toxicity — repeated exposure
Eye Irrit.	Serious eye irritation
Skin Irrit.	Skin irritation
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated inhalation exposure.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.