

# Safety data sheet

Page: 1/14

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Product: **IsoPMDI 92140**

Version: 2.0

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

## 1. Identification

### Product identifier

## IsoPMDI 92140

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

CAS Number: 9016-87-9

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

Relevant identified uses: Chemical

Uses advised against: Consumer spray applications, Consumer applications requiring temperatures above 40°C, Professional cleaning applications with aprotic polar solvents (meeting the IUPAC definition)

Recommended use: polyurethane component, Use as an intermediate, Use as Monomer, Formulation & (re)packing of substances and mixtures, Use in Coatings, Use in Adhesives, Use in Sealants, Use in other Composite Materials, Use in/as Composite Material based on wood, mineral and natural fibres, Use in Foundries, Use in/as Rigid Foam

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

Company:

BASF ITALIA S.p.A.

Via Marconato 8

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International emergency number:

Telephone: +49 180 2273-112

BASF Safety data sheet according to UN GHS 4th rev.  
Date / Revised: 03.01.2018  
Product: **ISO-PMDI 92140**

Version: 2.0

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

## 2. Hazards Identification

### Classification of the substance or mixture

#### According to UN GHS criteria

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

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

### Label elements

#### Globally Harmonized System, UN (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 (Respiratory system) through prolonged or repeated exposure (inhalation).

Precautionary Statements (Prevention):

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **ISO-PMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe spray.
P261	Avoid breathing spray.
P264	Wash with polyethylene glycol, followed by plenty of water thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P285	In case of inadequate ventilation wear respiratory protection.

Precautionary Statements (Response):

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P304 + P341	IF INHALED: If breathing is difficult, remove 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.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see on this label).
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.

Precautionary Statements (Storage):

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point.
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Labeling of special preparations (GHS):

Contains isocyanates. May produce an allergic reaction.

According to UN GHS criteria

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

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **ISO-PMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

## Other hazards

### According to UN GHS criteria

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

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## 3. Composition/Information on Ingredients

### 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 the full text can be found in section 16.

### Mixtures

Not applicable

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## 4. First-Aid Measures

### Description of first aid measures

Remove contaminated clothing immediately and clean before re-use or dispose it if necessary.

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.

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

Symptoms: tightness in the chest, coughing, difficulty breathing, Eye irritation, skin irritation, allergic symptoms

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **ISO-PMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

Hazards: Symptoms can appear later.

### **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.

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## **5. Fire-Fighting Measures**

### **Extinguishing media**

Suitable extinguishing media:

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

Unsuitable extinguishing media for safety reasons:

water jet

### **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.

### **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.

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## **6. Accidental Release Measures**

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

Use personal protective clothing. Information regarding personal protective measures see, section 8. Ensure adequate ventilation. Use breathing apparatus if exposed to vapours/dust/aerosol.

### **Environmental precautions**

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

### **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.

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## **7. Handling and Storage**

### **Precautions for safe handling**

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **IsoPMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

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. Clean up contamination as soon as they occur. Provide basic employee training to prevent/minimize exposures. Products freshly manufactured from isocyanates can contain incompletely reacted isocyanates and other dangerous substances, e.g. primary aromatic amines. Industrial cleaning with aprotic polar solvents (meeting the IUPAC definition) may lead to formation of hazardous primary aromatic amine (>0,1%). See Section 11.

Protection against fire and explosion:  
No special precautions necessary.

### **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

Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Protect against moisture. Formation of CO<sub>2</sub> and build up of pressure possible. Danger of bursting when sealed gastight.

### **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.

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## **8. Exposure Controls/Personal Protection**

### **Control parameters**

#### Components with occupational exposure limits

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

### **Exposure controls**

#### Personal protective equipment

Respiratory protection:

Respiratory protection in case of vapour/aerosol release. (Combination filter EN 14387 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

BASF Safety data sheet according to UN GHS 4th rev.  
Date / Revised: 03.01.2018  
Product: **IsoPMDI 92140**

Version: 2.0

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

Unsuitable materials  
polyvinylchloride (PVC) - 0.7 mm coating thickness  
Polyethylene-Laminate (PE laminate) - ca. 0.1 mm coating thickness

Suitable materials that provide sufficient protection for industrial cleaning with aprotic polar solvents (meeting the IUPAC definition):

butyl rubber (butyl) - 0.7 mm coating thickness  
nitrile rubber (NBR) - 0.4 mm coating thickness  
chloroprene rubber (CR) - 0.5 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.

## 9. Physical and Chemical Properties

### 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.

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **ISO-PMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

Upper explosion limit:	For liquids not relevant for classification and labelling.
Ignition temperature:	> 600 °C
Vapour pressure:	< 0,01 Pa (25 °C)
Density:	1,24 g/cm <sup>3</sup> (15 °C) 1,23 g/cm <sup>3</sup> (20 °C) 1,21 g/cm <sup>3</sup> (50 °C)
Relative density:	approx. 1,22 (20 °C)
Relative vapour density (air):	8,5 (20 °C)
Solubility in water:	No applicable information available.
Partitioning coefficient n-octanol/water (log Kow):	not applicable
Thermal decomposition:	> 230 °C
Viscosity, dynamic:	170 - 250 mPa.s (25 °C) (DIN 53018)
Explosion hazard:	not explosive
Fire promoting properties:	not fire-propagating

### Other information

Miscibility with water: Reacts with water.

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

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## 10. Stability and Reactivity

### Reactivity

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

Corrosion to metals: No corrosive effect on metal.

### Chemical stability

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

### Possibility of hazardous reactions

Reacts with water, with formation of carbon dioxide. Risk of bursting. Reacts with substances which contain active hydrogen.

### Conditions to avoid

Temperature: < 15 °C



BASF Safety data sheet according to UN GHS 4th rev.  
Date / Revised: 03.01.2018  
Product: **ISO-PMDI 92140**

Version: 2.0

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

Avoid moisture.

### **Incompatible materials**

Substances to avoid:  
acids, alcohols, amines, water, Alkalines

### **Hazardous decomposition products**

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

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## **11. Toxicological Information**

### **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.

LC50 rat (by inhalation): approx. 0,493 mg/l 4 h

#### Irritation

Assessment of irritating effects:  
Eye contact causes irritation. Skin contact causes irritation.

#### 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.

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **IsopMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

Industrial cleaning with aprotic polar solvents (meeting the IUPAC definition) may lead to formation of hazardous primary aromatic amine (>0,1%). Primary aromatic amines are chemicals that are regarded as potentially carcinogenic for humans based on animal testing. Some of these chemicals are known human carcinogens. No adverse health effects are anticipated if recommended personal protective equipment and industrial hygiene practices are used.

Experimental/calculated data:

rat (by inhalation)

Result: positive

#### 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.

#### 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.

Experimental/calculated data:

NOEL

rat by inhalation

#### Aspiration hazard

No aspiration hazard expected.

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## 12. Ecological Information

### Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.

There is a high probability that the product is not acutely harmful to aquatic organisms.

Toxicity to fish:

LC0 (96 h) > 1.000 mg/l, Fish (other)

Aquatic invertebrates:

BASF Safety data sheet according to UN GHS 4th rev.  
Date / Revised: 03.01.2018  
Product: **IsoPMDI 92140**

Version: 2.0

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

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

Aquatic plants:

EC0 (72 h) 1.640 mg/l, Scenedesmus subspicatus (OECD Guideline 201)

### **Persistence and degradability**

Elimination information:

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

### **Bioaccumulative potential**

Assessment bioaccumulation potential:

Does not significantly accumulate in organisms.

### **Mobility in soil**

Assessment transport between environmental compartments:

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

### **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): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

### **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.

### **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.

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## **13. Disposal Considerations**

### **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).

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **ISO<sup>®</sup>PMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

Waste key:

| 08 05 01<sup>□</sup> 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.

This material and its container must be disposed of in a safe way.

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## 14. Transport Information

### Land transport

ADR

| 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

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **IsoPMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

	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

### 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

### **Transport in bulk according to Annex II of MARPOL and the IBC Code**

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

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## 15. Regulatory Information

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

BASF Safety data sheet according to UN GHS 4th rev.

Date / Revised: 03.01.2018

Version: 2.0

Product: **IsoPMDI 92140**

(ID no. 30066646/SDS\_GEN\_00/EN)

Date of print 06.03.2018

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.

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

## 16. Other Information

Full text of classifications, hazard symbols and 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

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. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. 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.