

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) and  
Regulation (EU) No. 830/2015



Commercial name: Casting resin - hardener

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

### 1.1 Product identifier

Commercial name: Casting resin - hardener

Item number: 2010007

Type: T60 Hars

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

#### Recommended use

filling compound for electronical use

#### Uses advised against

Consumer use.

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

#### Manufacturer/supplier

OBO Bettermann Holding GmbH & Co. KG

P.O. Box 1120

58694 Menden

GERMANY

#### Division providing information

Customer Service

Tel.: +49 23 73 89 - 17 00

Fax: +49 23 73 89 - 12 38

export@obo.de

### 1.4 Emergency telephone number

REACH Registration of Chemicals GmbH

Tel.: +49 (0)700 24112112 (OBO)

Tel.: +1 872 5888271 (OBO)

## 2. Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 H332

Carc. 2 H351

Eye Irrit. 2 H319

Resp. Sens. 1 H334

Skin Irrit. 2 H315

Skin Sens. 1 H317

STOT RE 2\* H373

STOT SE 3 H335

**Classification information**

(\*,\*\*,\*\*\*,\*\*\*\*) Detailed explanation pls.refer to CLP regulation No. 1272/2008, annex VI, 1.2

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

**2.2 Label elements****Labelling according to Regulation (EC) No. 1272/2008 (CLP Regulation)****Product identifier**

9016-87-9 (diphenylmethanediisocyanate, isomeres und homologues)

**Hazard pictograms**

GHS07



GHS08

**Signal word**

Danger

**Hazard statement(s)**

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 exposure.

**Precautionary statement(s)**

P201	Obtain special instructions before use.
P280	Wear protective gloves/protective clothing/eye protection/face 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.

**2.3 Other hazards**

The product may be a skin sensitiser. It may also be a severe skin irritant. In case of respiratory system hypersensitivity (asthma, chronic bronchitis) do not handle this product.

PBT assessment

The product is not considered to be a PBT.

vPvB assessment

The product is not considered to be a vPvB.

**3. Composition/information on ingredients****3.1 Substances****Chemical characterization**

Substance name diphenylmethanediisocyanate, isomeres and homologues

**Identification numbers**

CAS no. 9016-87-9

### 3.2 Mixtures

Not applicable. The product is not a mixture.

## 4. First aid measures

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### 4.1 Description of first aid measures

#### General information

In all cases of doubt, or when sickness symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. Remove soiled or soaked clothing immediately.

#### After inhalation

Remove to fresh air, keep patient warm and at rest. Irregular breathing/no breathing: artificial respiration. If unconscious place in recovery position and seek medical advice.

#### After skin contact

Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.

#### After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.

#### After ingestion

Do not induce vomiting. Call a doctor immediately. Never give anything by mouth to an unconscious person. Keep at rest.

### 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

Treat symptomatically.

## 5. Firefighting measures

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### 5.1 Extinguishing media

#### Suitable extinguishing media

Alcohol resistant foam, CO<sub>2</sub>, powders, water spray

#### Unsuitable extinguishing media

High power water jet

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

Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Hydrogen cyanide (HCN); Isocyanate vapours. Carbon monoxide and carbon dioxide

### 5.3 Advice for fire-fighters

Appropriate breathing apparatus may be required. Cool endangered containers with water in case of fire. DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES; Fire residues must be disposed of in a proper manner.

## 6. Accidental release measures

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

#### For non-emergency personnel

Exclude sources of ignition and ventilate the area. Do not inhale vapours. Refer to protective measures listed in sections 7 and 8.

#### For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

## 6.2 Environmental precautions

Do not allow to enter drains. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations. Add the same decontaminant to the remnants and let stand for several days until no further reaction in non-sealed container. Once this stage is reached, close container and dispose according to local regulations (see section 13).

## 6.3 Methods and materials for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents. Immediately clean contaminated areas with following substances: usable (flammable): Water 45 Vol.%, Ethanol or Isopropyl Alcohol 50 Vol.%, Ammonia solution (density=0.88) 5 Vol.%.  
Alternative applicable to that (not flammable): Sodium Carbonate 5 Vol.%, Water 95 Vol.%

## 6.4 Reference to other sections

No data available.

## 7. Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used! The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Comply with the health and safety at work laws.

#### General protective and hygiene measures

Do not eat or drink during work - no smoking. Avoid product contact with skin, eyes and clothing.

#### Advice on protection against fire and explosion

No special measures necessary.

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

#### Technical measures and storage conditions

Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and direct sunlight. Keep container dry in a cool, well-ventilated place. Precautions should be taken to minimise exposure to atmospheric humidity or water: CO<sub>2</sub> will be formed which in closed containers can result in pressurisation.

#### Recommended storage temperature

Value 0 - 40 °C

#### Requirements for storage rooms and vessels

Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access! Containers which are opened must be carefully closed and kept upright to prevent leakage.

#### Incompatible products

Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

### 7.3 Specific end use(s)

No data available.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limit values

No	Substance name	CAS no.	EC no.
1	diphenylmethanediisocyanate, isomeres und homologues	9016-87-9	
	List of approved workplace exposure limits (WELs) / EH40		

	Isocyanates, all (as -NCO) Except methyl isocyanate	
	WEL short-term (15 min reference period)	0.07 mg/m <sup>3</sup>
	WEL long-term (8-hr TWA reference period)	0.02 mg/m <sup>3</sup>
	Comments	Sen

## 8.2 Exposure controls

### Appropriate engineering controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations or particulates and solvent vapour below the OEL, suitable respiratory protection must be worn. Air-fed protective respiratory equipment must be worn by spray operator even when good ventilation is provided.

### Personal protective equipment

#### Respiratory protection

When spraying: air fed respirator. For operations other than spraying: In well ventilated areas, air-fed respirators could be replaced by a combination of charcoal filter and particulate filter mask.

#### Eye / face protection

Wear safety goggles to protect against solvent splashes.

#### Hand protection

Adhere to the professional organisation rule „Use of protective gloves“.

Appropriate chemicals resistant glove tested in compliance with EN 374.

Recommendation for protection against components generally found in the products:

For short-term contact (i.e. splash protection):

Appropriate material: nitrile rubber, Neopren

Material thickness: >0.4 mm

Breakthrough time: >480 min

Before use, the protective glove should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties).

Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves.

Protective gloves shall be replaced immediately when physically damaged or worn. Preventive hand protection (skin protection cream) recommended. Wash immediately contaminated skin.

Design operations thus to avoid permanent use of protective gloves.

#### Other

Personal should wear antistatic clothings made of natural fiber or of high temperature resistant fiber. All parts of the body should be washed after contact.

### Environmental exposure controls

No data available.

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Form: liquid

Colour: brown

Odour: earthy; musty

Odour threshold: No data available.

pH value: not determined

Boiling point / boiling range: value > 300 °C

Melting point / melting range: no data available

Flash point: value > 250 °C

method: DIN 51758

Ignition temperature: value > 500 °C

Auto-ignition temperature: no data available

Oxidising properties: no data available

Explosive properties: no data available

Flammability (solid, gas): no data available  
Lower flammability or explosive limits: no data available  
Upper flammability or explosive limits: no data available  
Vapor pressure: value:  $0.01 \cdot 10^{-3}$  hPa  
Reference temperature: 20°C  
Method: 92/69/EEC, A.4

Vapour density: no data available  
Evaporation rate: no data available  
Relative density: no data available  
Density: value: appr. 1.23 g/cm<sup>3</sup>  
Reference temperature: 23°C  
Solubility(ies): no data available  
Partition coefficient: n-octanol/water: no data available  
viscosity: value: 200 mPa\*s

## 9.2 Other information

No data available.

## 10. Stability and reactivity

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### 10.1 Reactivity

Dangerous reactions are not expected if the product is handled according to its intended use.

### 10.2 Chemical stability

Release of carbon dioxide (CO<sub>2</sub>) starting from a polymerisation temperature of approximately 200°C.

### 10.3 Possibility of hazardous reactions

Contamination with incompatible materials and other compounds which react with isocyanates may result in dangerous pressure and possible bursting of closed containers.

### 10.4 Conditions to avoid

Stable under recommended storage and handling conditions(See section 7).

### 10.5 Incompatible materials

Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions. The product reacts slowly with water resulting in evolution of carbon dioxide. In closed containers, pressure build up could result distortion blowing and in extreme cases bursting of the container.

### 10.6 Hazardous decomposition products

In a fire, hazardous decomposition products, such as smoke, carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen cyanide, monomers of isocyanates, amines and alcohols may be produced.

## 11. Toxicological information

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### 11.1 Information on toxicological effects

#### Acute oral toxicity

LD50: > 10000 mg/kg  
Species: rat (male)  
Method: OECD 401

#### Acute dermal toxicity

LD50: > 9400 mg/kg  
Species: rabbit  
Method: OECD 402

### **Acute inhalational toxicity**

LC50: 0.31 mg/m<sup>3</sup>

Duration of exposure: 4 h

State of aggregation: Dust/mist

Species: rats (male/female)

Comments: The substance was tested in a form (that is to say with a particular grain size distribution) that differs from the forms it is usually marketed and most probably used. Therefore a modified classification for acute inhalation toxicity is acceptable.

### **Skin corrosion/irritation**

Species: rabbit

Method: OECD 404

Evaluation: irritant

### **Serious eye damage/irritation**

No data available

### **Respiratory or skin sensitisation**

Route of exposure: skin

Evaluation: sensitizing

### **Germ cell mutagenicity**

No data available

### **Reproductive toxicity**

No data available

### **Carcinogenicity**

No data available

### **STOT-single exposure**

No data available

### **STOT-repeated exposure**

No data available

### **Aspiration hazard**

No data available

### **Delayed and immediate effects as well as chronic effects from short and long-term exposure**

Prolonged contact with the skin may produce tannic effects and lead to irritation. Eye contact with the product can cause severe eye irritation with redness and conjunctival swelling. Repeated or prolonged skin contact may cause allergic skin reactions in sensitive individuals which can be seen as redness.

### **Other information**

Based on the properties of the isocyanate components and considering toxicological data on similar preparations: This preparation may cause acute irritation and/or sensitisation of the respiratory system leading to an asthmatic condition, wheeziness and a tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability.

## **12. Ecological information**

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### **12.1 Toxicity**

#### **Toxicity to fish (acute):**

LC50: > 1000 mg/l

Duration of exposure: 96 h

Species: Brachydanio rerio

Method: OECD 203

#### **Toxicity to fish (chronic):**

No data available

#### **Toxicity to Daphnia (acute)**

EC50: > 1000 mg/l

Duration of exposure: 24 h

Species: Daphnia magna

Method: OECD 202

**Toxicity to Daphnia (chronic):**

No data available

**Toxicity to algae (acute):**

ErC50: > 1640 mg/l

Duration of exposure: 72 h

Species: *Desmodesmus subspicatus*

Method: OECD 201

**Toxicity to algae (chronic):**

No data available

**Bacteria toxicity**

EC50: > 100 mg/l

Duration of exposure: 3 h

Species: activated sludge

Method: OECD 209

## 12.2 Persistence and degradability

### Biodegradability

Value: 0%

Method: OECD 302 C

Evaluation: not readily biodegradable

### Physico-chemical eliminability

Comments: The product reacts with water in the boundary layer forming CO<sub>2</sub> and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. According to experience to date, polyurea is inert and is not degradable.

## 12.3 Bioaccumulative potential

No data available.

## 12.4 Mobility in soil

No data available.

## 12.5 Results of PBT and vPvB assessment

PBT assessment: The product is not considered to be a PBT.

vPvB assessment: The product is not considered to be a vPvB.

## 12.6 Other adverse effects

No data available.

## 12.7 Other information

### Other information

The product should not be allowed to enter drains or water courses.

## 13. Disposal considerations

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### 13.1 Waste treatment methods

#### Product

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

#### Packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of in agreement with the regional waste disposal company.

## 14. Transport information

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### 14.1 Transport ADR/RID/ADN

The product is not subject to ADR/RID/ADN regulations.

**14.2 Transport IMDG**

The product is not subject to IMDG regulations.

**14.3 Transport ICAO-TI / IATA**

The product is not subject to ICAO-TI / IATA regulations.

**14.4 Other information**

No data available.

**14.5 Environmental hazards**

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

**14.6 Special precautions for user**

Transport within the user's premises: To be transported always in closed, upright and safe containers. Make sure that persons handling these containers are aware of the rules of conduct in case of incident or spillage.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not relevant.

**15. Regulatory information****15.1 Safety, health and environmental regulations/legislations specific for the substance or mixture****EU regulations****Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

In accordance with the Reach regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

**REACH candidate list of substances of very high concern (SVHC) for authorisation**

In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation („Authorisation list“)

**Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES; PREPARATIONS AND ARTICLES**

The product is considered being subject to REACH regulation (EC) 1907/2006 annexe XVII No 3

The substance is considered being subject to REACH regulation (EC) 1907/2006 annexe XVII.

No	Substance name	CAS no.	EC no.	No
1	diphenylmethanediisocyanate, isomeres and homologues	9016-87-9	-	56

**Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances**

This substance is not subject to Part I or 2 of Annex I

**Other regulations**

Adhere to the national sanitary and occupational safety regulations when using tis product.

**15.2 Chemical safety assessment**

A chemical safety assessment has not been carried out for this mixture.

## 16. Other information

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### **Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:

Alterations to the previous edition are marked in the left-hand margin.