

Safety data sheet
According to 1907/2006/EC, Article 31

Printing date 25.11.2017

Version number 1

Revision: 25.11.2017

Trade name: Polyurethane Impact Resistant Casting Resin Part B

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

- **1.1 Product identifier**
- **Trade name: Polyurethane Impact Resistant Casting Resin Part B**
- **Utilization of the substance of the formulation:** Polyurethane resin
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application for the substance / the preparation:** Polyurethane resin
- **Uses advised against:** None
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
DWR plastics
Broadway
Newport
Shropshire
TF10 7TP
Tel: +44 (0) 7576028547
- **Further information obtainable from:** Environment protection department
- **1.4 Emergency telephone number:** + 44 (0) 117 9550448

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 Health Hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carc. 2 H351 Suspected of causing cancer.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

- **2.2 Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Danger

- **Hazard determining components of labelling:**

4,4'-diphenyl-methane diisocyanate, oligomeric, Methylenediphenyl Diisocyanate, Diisopropylphenyl Isomers
(Contd. on page 2)



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· **Hazard statements**

H332 Harmful if inhaled.

H315 Cause skin irritation.

H319 Causes serious eye irritation.

H317 May cause allergic skin reaction.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

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

· **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P284 [In case of inadequate ventilation] wear respiratory protection.

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

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

SECTION 6: Accidental release measures

· **3.2 Chemical characterisation: Mixtures**

· **Description:** Mixture of substances listed below with non-hazardous additions.

Dangerous components:		
CAS: 25686-28-6 Reg.nr.: 01-2119457013-49	4,4'-diphenyl-methane diisocyanate. Oligomeric ~ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ~ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	50 - 75%
CAS: 101-68-8 Reg.nr.: 01-2119457014-47	Diphenylmethane-4,4'-Di-Isocyanate Carc. 2: H351; Acute Tox. 4: H332; 25-50% STOT RE 2: H373; Eye Irrit. 2: H319; STOT SE 3: H335; Skin Irrit. 2: H315; Resp. Sens. 1: H334; Skin Sens. 1: H317	
CAS: 159168-82-8 Reg.nr.: 01-2119492304-39	Methylenediphenyl Diisocyanate, Dipropylenglycol, Tripropylenglycol Copolymer Acute Tox. 4: H332; Skin Irrit. 2: H315; Eye Irrit. 2: H319; Resp. Sens. 1: H334; Carc. 2: H351; STOT RE 2: H373; Skin Sens. 1: H317; STOT SE 3: H335	
CAS: 38640-62-9 Reg.nr.: 01-2119565150-48	Diisopropyl-naphthalene Isomers Asp. Tox. 1: H304; Aquatic Chronic 1: H410	

Additional information: For the wording of the listed risk phrases refer to section 16.

(Contd. on page 3)



Safety data sheet
According to 1907/2006/EC, Article 31

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SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Involve doctor immediately.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

After

· **After swallowing:**

Do not induce vomiting; call for medical help immediately.

Seek immediate medical advice.

If swallowed, rinse mouth with water (only if the person is conscious).

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:** Extinguishing powder. Do not use water.

· **For safety reasons unsuitable extinguishing agents:** Water

· **5.2 Special hazards arising from the substance or mixture**

In case of fire, formation of carbon monoxide, nitrogen oxide, isocyanate vapour, and traces of hydrogen cyanide is possible. Fireman have to wear self-contained breathing apparatus. Do not let enter contaminated extinguishing water into the soil, groundwater or surface waters.

· **5.3 Advice for firefighters**

· **Protective equipment:**

Do not inhale explosion gases or combustion gases. Wear self-contained respiratory protective device. Wear fully protective suit.

· **Additional information**

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Avoid contact with eyes and skin.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

(Contd. on page 4)

Safety data sheet
According to 1907/2006/EC, Article 31

Printing date 25.11.2017

Version number 1

Revision: 25.11.2017

Trade name: Polyurethane Impact Resistant Casting Resin Part B

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

The protective measures necessary when dealing with isocyanates must be observed. Avoid contact with skin and eyes and inhalation of vapors.

Open and handle receptacle with care.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· **Information about fire - and explosion protection:**

Protect against electrostatic charges.

Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

Keep container tightly closed and dry and storage in a good ventilated room. Storage temperature: 15 - 25 °C.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

Ingredients with limit values that require monitoring at the workplace:

4,4'-diphenyl-methane diisocyanate

Workplace Exposure Limits:

State: 8 hour TWA

UK 0.02 mg/m³

0.07 mg/m³

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: Gas/vapour filter type A: organic vapours (EN141) respirator in case of insufficient ventilation.

· **Protection of hands:**

Preventive skin protection (3-point program) required. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Natural rubber, NR

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

(Contd. on page 5)

Safety data sheet
According to 1907/2006/EC, Article 31

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Version number 1

Revision: 25.11.2017

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:	Fluid
Colour:	Pale yellow
Odour:	Characteristic
Odour threshold:	Not determined

pH-value: Not determined

Change in condition

Melting point/Melting range:	41 °C
Boiling point/Boiling range:	300 °C

Flash point: 250 °C

Flammability (solid, gaseous): Not applicable

Ignition temperature: 400 °C

Decomposition temperature: Not determined

Self-igniting: Product is not self-igniting

Danger of explosion: Product does not present an explosion hazard

Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapour pressure at 20 °C: 0.0002 hPa

Density at 20 °C: 1.13 -1.14 g/cm³

Relative density: Not determined.

Vapour density: Not determined.

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

Dynamic at 20 °C:	94 mPas
Kinematic:	Not determined.

Solvent content:

Organic solvents:	0%
VOC (EC)	No further information available

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions: Exothermic reaction with amines and alcohols; reacts with water forming CO₂, in closed containers risk of bursting owing to increase of pressure.

10.4 Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials: water , alcohol , amine , base and acid

10.6 Hazardous decomposition products: Hydrogen cyanide (prussic acid)

(Contd. on page 6)

Safety data sheet
According to 1907/2006/EC, Article 31

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Version number 1

Revision: 25.11.2017

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SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Harmfull if inhaled.

- **LD/LC50 values relevant for classification:**

25686-28-6 4,4'-diphenyl-methane diisocyanate. oligomeric

Oral	LD50	> 5000 mg/kg (Rat)
Dermal	LD50	>9400 mg/kg (Rabbit) (OECD Prüfrichtlinie 402)
Inhalative	LC 50 / 1h	>2.24 mg/l (Rat)

103-23-1 bis(2-ethylhexyl) adipate

Oral	LD50	9110 mg/kg (rat)
Dermal	LD50	8410 mg/kg (rbt)

- **Primary irritant effect:**
 - **Skin corrosion/irritation** Causes skin irritation.
 - **Serious eye damage/irritation** Causes eye irritation.
 - **Respiratory or skin sensitisation** May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
 - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
 - **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
 - **Additional toxicological information:**
- The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version: Irritant
- **Carcinogenicity** Suspected of causing cancer
 - **Reproductive toxicity** Based on available data, the classification criteria are not met.
 - **STOT-single exposure** May cause respiratory irritation. .
 - **STOT-repeated exposure** May cause damage to organs through prolonged or repeated exposure.
 - **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

25686-28-6 4,4'-diphenyl-methane diisocyanate. oligomeric

LC50 (96 h)	> 1000 mg/l (F)
	>1000mg/l (Danio Rerio)
EC50 (72 h)	>100 mg/l (B)
	>1000 mg/l (D)
EC50 (24h)	>1000 mg/l (Daphnia Magna)
EC50(3h)	>100 mg/l (sludge)

103-23-1 bis(2-ethylhexyl) adipate

LC50 (96 h)	54-150 mg/l (F)
EC50 (48 h)	> 500 mg/l (D)
EC50 (72 h)	> 500 mg/l (A)

(Contd. on page 7)



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- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:** Elimination by adsorption onto activated sludge
- **12.3 Bio accumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **General notes:**
Water hazard class 1 (Self-assessment): Slightly hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
Dispose in accordance to applicable local and national or regional rules.
- **Recommendation European waste catalogue** 08 05 01* Isocyanate
- **Uncleaned packaging:**
- **Recommendation:**
- Disposal according to official regulations

SECTION 14: Transport information

- | | |
|------------------------------------------------------------------------------------|-----------------|
| 14.1 UN-Number | |
| ADR, ADN, IMDG, IATA | Void |
| <hr/> | |
| 14.2 UN proper shipping name | |
| ADR, ADN, IMDG, IATA | Void |
| <hr/> | |
| 14.3 Transport hazard class(es) | |
| ADR, ADN, IMDG, IATA | |
| Class | Void |
| <hr/> | |
| 14.4 Packing group | |
| ADR, IMDG, IATA | Void |
| <hr/> | |
| 14.5 Environmental hazards: | |
| Marine pollutant: | No |
| <hr/> | |
| 14.6 Special precautions for user | Not applicable. |
| <hr/> | |
| 14.7 Transport in bulk according to Annex II of
Marpol and the IBC Code | Not applicable. |
| <hr/> | |
| UN "Model Regulation": | Void |

(Contd. on page 8)

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SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS07

- **Signal word** Warning
- **Hazard statements**
H319 Causes serious eye irritation.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash thoroughly after handling.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **National regulations:**
- **Technical instructions (air):**

Class	Share in %
NK	1.5-3

- **Waterhazard class:** Water hazard class 1 (VwVwS 17.05.99): slightly hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.
- **Department issuing MSDS:** environment protection department

(Contd. on page 9)



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· Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society) VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent LD50:

Lethal dose, 50 percent

PBT: Persistent, Bio accumulative and Toxic vPvB: very Persistent and very Bio accumulative

Flam. Liq. 3: Flammable liquids, Hazard Category 3 Acute

Tox. 4: Acute toxicity, Hazard Category 4

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2 Asp.

Tox. 1: Aspiration hazard, Hazard Category 1

Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3