# SAFETY DATA SHEET

# BITHANE HARDENER

**ISSUE DATE:** **30TH September 2019**

## Section 1: Identification of the substance/mixture and of the company/undertaking

**1.1 Product identifier**
BITHANE hardener

**1.2 Relevant uses of the substance or mixture and uses advised against**
Isocyanate. Hardener for polyurethane resins

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

| | |
|---|---|
| Company information: | Prysmian Cables and Systems Ltd,<br>Components Unit<br>Wrexham Industrial Estate,<br>Oak Road, Wrexham. LL13 9PH |
| Telephone: | +44 (0)1978 66 2375 |
| e-mail: | dave.lamb@prysmian.com |
| **1.4 Emergency telephone number:** | +44 (0)1978 66 22166 |

## Section 2: Hazards identification

This product is a mixture

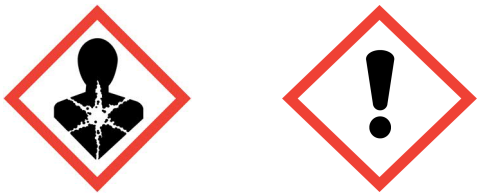
### 2.1 Classification of the substance or mixture

Classification according to (EC) No1272/2008 (CLP/GHS)

| | |
|---|---|
| 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 (Respiratory tract irritation) |
| STOT RE 2, | H373 |

### 2.2 Label Elements

Hazard pictograms:



Signal Word: Danger

Hazard Statements:

| | |
|---|---|
| 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 respiratory organs through prolonged or repeated exposure if inhaled |

Precautionary Statements:

| | |
|---|---|
| P260 | Do not breath vapour or spray |
| P284 | In case of inadequate ventilation wear respiratory protection |
| P280 | Wear protective gloves / protective clothing / eye protection / face protection |
| IF INHALED: | Remove victim to fresh air and keep at rest in a position comfortable for breathing |
| IF ON SKIN: | Wash with plenty of soap and water |
| IF IN EYES: | Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. |

If exposed or if you feel unwell call a poison centre or doctor / physician.

**2.3 Other hazards**

None

## Section 3: Composition / information on ingredients

3.2 Mixtures

| Product Name | CAS | EC | % | Classification (EC) No. 1272/2008 (CLP | |
|---|---|---|---|---|---|
| 4,4' diphenylmethane diisocyanate (isomers and homologues) | 9016-87-9 | Polymeric | 100 | Acute Tox. 4,<br>Skin Irrit. 2,<br>Eye Irrit. 2,<br>Resp. Sens. 1,<br>Skin Sens. 1,<br>Carc. 2,<br>STOT SE 3,<br>(Respiratory tract irritation)<br>STOT RE 2,<br>(Respiratory tract inhalation) | H332<br>H315<br>H319<br>H334<br>H317<br>H351<br>H335<br><br>H373 |

## Section 4 – First aid measures

**4.1 Description of first aid measures**

General Information – remove contaminated clothing immediately

| | |
|---|---|
| Inhalation: | Remove to fresh air and keep warm. If there is difficulty in breathing, seek medical advice immediately. |
| Skin contact: | Wash immediately with soap and water. Seek medical advice in the event of persistent irritation. Contaminated clothing should be removed and thoroughly cleaned before re-use. |
| Eye contact: | Hold the eyes open and rinse with water for 10-15 minutes. Consult an ophthalmologist immediately. |

| | |
|---|---|
| Ingestion: | Do not induce vomiting. Seek medical advice immediately, showing the doctor this sheet. |

**4.2 Most important effects, both acute and delayed**

| | |
|---|---|
| Eye contact | Causes serious eye irritation. |
| Inhalation: | Harmful if inhaled. This product is a respiratory irritant. Prolonged or repeated exposure may result in respiratory sensitisation |
| Skin Contact: | Causes skin irritation. May cause an allergic skin reaction. |
| Ingestion: | Irritating to mouth, throat and stomach. Ingestion may cause irritation of the gastrointestinal tract |

## Section 5: Firefighting measures

**5.1 Extinguishing media**

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|---|---|
| Suitable extinguishing: | Foam, carbon dioxide or dry powder |
| Unsuitable extinguishing media: | Water may only be used in copious quantities. Reaction between water and hot isocyanate may be vigorous. Keep exposed (sealed) containers cool by spraying with water. |

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

| | |
|---|---|
| Hazards from the substance or mixture: | In a fire or if heated, a pressure increase will occur and the container may burst |
| Hazardous decomposition products: | Carbon dioxide, carbon monoxide, mixed oxides of nitrogen, isocyanate vapour and traces of hydrogen cyanide |

**5.3 Advice for firefighters**

| | |
|---|---|
| Special precautions: | Isolate the scene by removing all persons from the vicinity of the fire. A hazardous build up of pressure could occur if water contaminated containers are resealed. |
| Special protective equipment: | Fire fighters should wear appropriate protective equipment and full face self-contained breathing apparatus. Clothing for firefighters should conform to EN 469. Safety helmet, PVC gloves and boots should be worn. |

## Section 6: Accidental release measures

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

Evacuate surrounding areas. Prevent entry of unprotected personnel into contaminated areas. Avoid breathing vapours or mist. Provide adequate ventilation or ensure appropriate respirator is worn.

### 6.2 Environmental precautions

Do not allow runoff and contact with soil, waterways, drains and sewers.

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

Small spill: Stop leak if without risk. Dilute with water and mop up if water soluble. Alternatively absorb on dry inert medium and transfer for container suitable for disposal via a licensed contractor (containers should have loose fitting lids / closures)

Large spill: Stop leak if without risk. Approach release from upwind. Prevent release into water courses, basements or confined areas. Absorb on dry inert medium and transfer to open topped container suitable for disposal via a licensed contractor.

### 6.4 Reference to other sections

See section 13 for disposal information

## Section 7: Handling and storage

### 7.1 Precautions for safe handling

| | |
|---|---|
| Protective measures: | Use appropriate personal protective equipment. Persons with a history of skin sensitization, allergies or asthma should not be employed in the process. Avoid contact with eyes skin and clothing. Do not breathe vapour or mist. Do not ingest. Wear appropriate respirator if ventilation is inadequate. Store in original containers re-sealed after use. Empty containers containing residue should be treated as hazardous |
| Advice on general occupational hygiene: | Eating drinking and smoking should be prohibited in working areas. Wash thoroughly after handling and remove contaminated clothing. |

### 7.2 Conditions for safe storage including any incompatibilities

Store in accordance with local regulations.
Store in a cool dry location away from direct sunlight.
Recommended temperature range for storage is 5$^{o}$C to 40$^{o}$C.
Avoid contact with acids, amines and water.

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## Section 8 – Exposure controls / personal protection

### 8.1 Control parameters

Occupational exposure limits (EH40/2005 WELs (United Kingdom, 12/2011):

Skin sensitiser (as NCO):

STEL: 0.07mg/$m^3$, 15 minutes
TWA: 0.02mg/$m^3$, 8 hours

Recommended monitoring procedures:

Medical supervision of all persons who come into contact with respiratory sensitisers is recommended. Personnel with a history of asthma, bronchitis or skin sensitisation should not work with MDI based products.

OELs do not apply to previously sensitised individuals who should be removed from further exposure.

### 8.2 Exposure controls

| | |
|---|---|
| Appropriate engineering controls: | Provide exhaust ventilation to keep airborne vapour concentrations below the OEL. |
| Individual protection methods | |
| Hygiene measures: | Wash exposed areas of skin thoroughly after handling. Remove contaminated clothing and launder before re-use |
| Eye / face protection: | Eye protection to an approved standard should be used to avoid exposure to liquid splashes, mists, gases or dust. |
| Skin protection: | Chemically resistant gloves to an approved standard (eg EN374) should be worn Recommended materials are nitrile rubber or (for longer term application) butyl rubber. |
| Body protection: | Standard industrial clothing. Chemically resistant boots |
| Respiratory protection: | Respiratory protection should be worn in case of inadequate ventilation / usage in confined spaces. |

## Section 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Appearance: | Brown liquid |
| Odour: | Earthy / musty |
| Odour threshold: | no data available |
| pH: | not applicable |
| Melting point: | Crystallises below 5°C |
| Boiling point: | >300°C |
| Flash point: | >250°C |
| Evaporation rate: | no data available |
| Flammability | no data available |
| Upper/lower flammability or explosive limits | not applicable |
| Vapour pressure | <0.001 Pa @ 20°C |
| Vapour density | 8.5 (Air = 1) |
| Relative density | 1240 kg/$m^3$ @ 20°C |
| Solubility in water: | Insoluble. Reacts producing $CO_2$ |
| Solubility in other ingredients: | Aromatic hydrocarbons, acetone |
| Partition coefficient Octanol/water: | no data available |
| Auto-ignition temperature | no data available |
| Decomposition temperature | no data available |
| Viscosity: | Approx 300m Pa.s @ 20°C |
| Explosion properties: | no data available |
| Oxidising properties: | no data available |

## SECTION 10 - STABILITY AND REACTIVITY

| | |
|---|---|
| **10.1 Reactivity:** | No specific data available |
| **10.2 Chemical stability:** | The product is stable |
| **10.3 Possibility of hazardous reactions:** | Polymerises at about 200°C with evolution of $CO_2$. Exothermic reaction with alkalis, alcohols and amines and water. May result in dangerous pressure build-up in closed containers. |
| **10.4 Conditions to avoid:** | Avoid high temperatures |
| **10.5 Incompatible materials**: | Alcohols, amines, water, acids and bases. |
| **10.6 Hazardous decomposition products:** | Combustion products may include carbon monoxide, carbon dioxide, mixed oxides of nitrogen and hydrogen cyanide |

## Section 11: Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity Diphenylmethane diisocyanate (MDI), isomers and homologues:

Ingestion LD50 Oral, rat (male, female): >10000mg/kg

Inhalation: $LC_{50}$ Inhalation dusts and mists, rat (male, female) 0.49mg/l (4 hour exposure)

Skin: $LD_{50}$ Dermal, rabbit (male, female) >9400 mg/kg

Potential acute health effects

Inhalation: Harmful if inhaled.
Product is a respiratory irritant and potential respiratory sensitiser.
Symptoms may include irritation to the eyes nose and throat possibly combined with dryness of the throat and tightness of chest.

Ingestion: Irritating to mouth, throat and stomach. Low oral toxicity.
Ingestion may cause irritation of the gastrointestinal tract.

Skin Contact: Causes skin irritation. May cause an allergic skin reaction.
Studies have shown that respiratory sensitisation can be induced via skin contact with respiratory sensitisers such as diisocyanates.

Eye Contact: Causes serious eye irritation

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: Adverse symptoms may include the following:
Respiratory tract irritation
Coughing wheezing and breathing difficulties
Asthma

Ingestion: No specific data

Skin Contact: Adverse symptoms may include the following:
Irritation, redness

Eye Contact: Adverse symptoms may include the following:
Pain or irritation ,watering, redness

## Section 12: Ecological information

### 12.1 Toxicity

| | |
|---|---|
| Acute fish toxicity: | LCO >1000 mg/l<br>Test species – bracchydanio rerio<br>Test duration – 96 hours |
| Toxicity for daphnia: | EC50 >1000 mg/l<br>Test duration – 24 hours |
| Acute bacteria toxicity: | EC50 >100 mg/l<br>Test on activated sludge micro-organisms<br>Test duration – 3 hours |

### 12.2 Persistence and degradability

Reacts with water at the interface producing $CO_2$ and forming a solid, insoluble high melting point solid (polyurea). The reaction product is non-biodegradable.

### 12.3 Bioaccumulative potential

No significant bioaccumulation

### 12.4 Mobility in soil

No information available

### 12.5 Results of PBT and vPvB assessment

No information available

### 12.6 Other adverse effects

None known

## Section 13: Disposal considerations

### 13.1 Waste treatment methods

Product

Methods of disposal: Generation of waste should be avoided wherever possible. Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation together with any local authority requirements. Disposal should be via a licensed waste operator.

Hazardous waste: Yes

European waste catalogue (EWC)

| Waste Code | Waste Designation |
|---|---|
| 08 05 01* | Waste isocyanates |
| 16 03 05* | Organic wastes containing dangerous substances |

Packaging

Methods of disposal: Used resin packaging containing fully mixed and cured residue is non-hazardous and may be disposed of as general waste. If disposal by mixing scrap or waste resin packs off is not feasible then disposal should be via a licensed operator (normally controlled incineration or landfill)

Special precautions: Avoid dispersal of waste material and runoff into soil, waterways, drains and sewers.

## Section 14: – Transport information

**14.1 UN Number**

Not classified as hazardous for transport

**14.2 UN proper shipping name**

Not classified as hazardous for transport

**14.3 Transport hazard class(es)**

Not classified as hazardous for transport

**14.4 Packing group**

Not classified as hazardous for transport

**14.5 Environmental hazards**

Not classified as hazardous for transport

**14.6 Special precautions for user**

Not classified as hazardous for transport

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and IBC code

Not classified as hazardous for transport

## Section 15 – Regulatory information

### 15.1 Safety, health and environmental regulations for the substance or mixture

This product is compliant with the REACH Regulation EC1907/2006

### 15.2 Chemical Safety

Chemical safety assessments have not been carried out.

## Section 16: Other information

Full text of hazard phrases as follows:

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 respiratory organs through prolonged or repeated exposure if inhaled

Full text of classifications according to Regulation (EC) 1272/2008 [CLP/GHS]

ACUTE TOXICITY (INHALATION) - Category 4. H332
CARCINOGENICITY – Category 2. H351
SERIOUS EYE DAMAGE / EYE IRRITATION – Category 2. H319
RESPIRATORY SENSITISATION – Category 1. H334
SKIN CORROSION / IRRITATION – Category 2. H315
SKIN SENSITISATION – Category 1. H317
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory tract, inhalation) – Category 2. H373
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (respiratory tract, irritation) – Category 3. H335

This SDS is the first version of this SDS for this product.

This information is believed to be accurate and represents the best information available to the company at this time. This information is provided as a guide to the hazards and respective safety precautions relevant to this product. This SDS does not represent any guarantee of performance or specification. The information relates only to the product specified and may not be suitable for combinations with other materials or in processes other than those specifically described herein.