

Section 1 Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

BITHANE hardener
UFI 4DV4-A2WG-K315-MDQH

1.2. Relevant identified uses of the substances 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
Oak Road, Wrexham Industrial Estate,
Wrexham LL13 9PH

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+44 (0)1978 66 2216

Section 2 Hazards identification

This product is a mixture.

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (EU "CLP" Regulation):

Acute Toxicity	Hazard Category 4	H332
Skin Irritation	Hazard Category 2	H315
Eye Irritation	Hazard Category 2	H319
Respiratory Sensitisation	Hazard Category 1	H334
Skin Sensitisation	Hazard Category 1	H317
Carcinogenicity	Hazard Category 2	H351
Specific Target Organ Toxicity: Single Exposure	Hazard Category 3	H335 (Respiratory tract irritation)
Specific Target Organ Toxicity: Repeated Exposure	Hazard Category 2	H373

2.2. Label elements

Labelling according to Regulation (EC) 1272/2008 (EU "CLP" Regulation):

Signal Word:

Danger

GHS Pictogram



Hazard Statement:

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

Precautionary Statement (Prevention):

Do not breathe vapour or spray (P260)
In case of inadequate ventilation wear respiratory protection (P284)
Wear protective gloves/protective clothing/eye protection/face protection (P280)

Precautionary Statement (Response):

IF INHALED: Remove 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 eye irritation persists, get medical attention.

2.3. Other hazards

None.

Section 3 Composition / information on ingredients

This product is a mixture.

Chemical Name	REACH Registration Number	CAS Number	EINECS/ELINCS	Hazard Class/Category/Statement	Concentration (%)
4,4' diphenylmethane diisocyanate (isomers and homologues)	01-2119457024-46-XXXX	9016-87-9	500-079-6	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) (Respiratory tract inhalation)	100

Section 4 First aid measures

4.1. Description of first aid measures

General information: Remove contaminated clothing immediately.

Inhalation: Remove to fresh air, provide warmth and rest. If there is difficulty breathing, seek medical attention immediately.

Skin Contact: Wash contaminated skin immediately with soap and water. Seek medical advice in the event of persistent irritation. Contaminated clothing should be removed and thoroughly cleaned before reuse.

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

Eye Contact: Flush with large amounts of water for 10-15 mins, holding the eye open. Consult an Ophthalmologist immediately.

4.2. Most important symptoms and 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.

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

No data available

Section 5 Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Carbon dioxide, foam 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/mixture: In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous decomposition products: Material decomposes to give 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 buildup of pressure could occur if water contaminated containers are resealed.

Special protective equipment: Firefighters should wear appropriate protective equipment and full-face self-contained breathing apparatus. Clothing for firefighters should conform to EN 469.

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 mists. Provide adequate ventilation or ensure an appropriate respirator is worn.

6.2. Environmental precautions

Do not allow runoff or 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 5oC to 40oC. Avoid contact with acids, amines and water.

7.3. Specific end use(s)

See Section 1.2

Section 8 Exposure controls / personal protection

8.1. Control parameters

	8 Hour TWA	15 Min STEL
Skin sensitiser (as NCO)	0.02 mg/m ³	0.07 mg/m ³

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

8.2.1. Appropriate engineering controls

Provide exhaust ventilation to keep airborne vapour concentrations below the OEL.

8.2.2. 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**

Physical state:	Liquid
Colour:	Brown
Odour:	Earthy/musty
Odour threshold:	No data available
Melting point:	Crystallises below 5 °C
Freezing point:	No data available
Boiling point:	300°C
Flammability:	No data available
Explosive limits:	No data available
Lower explosion limit:	No data available
Upper explosion limit:	No data available
Flash point:	>250°C
Auto-ignition temperature	No data available
Decomposition temperature	No data available
pH:	Not applicable
Viscosity, kinematic:	Approx 300 mPa·s at 20 °C
Solubility:	Insoluble in water, reacts producing CO ₂
Partition coefficient n-octanol/water: (Log K _{ow}):	No data available
Vapour pressure:	<0.001 Pa at 20°C
Vapour pressure at 50°C	No data available
Density:	1240 kg/m ³ at 20°C
Relative vapour density at 20°C	8.5 (relative to air)
Particle characteristics	Does not contain nanomaterials

9.2. Other information**9.2.1. Information with regard to physical hazard classes**

No additional information available.

9.2.2. Other safety characteristics

No additional information available.

Section 10 Stability and reactivity**10.1. Reactivity**

No specific data available.

10.2. Chemical stability

Stable at room temperature and temperatures up to 60°C

10.3. Possibility of hazardous reactions

Polymerises at about 200 °C with evolution of CO₂. 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

Route	Test	Species	Duration	Result
Oral:	LD50	Rat (male, female)	-	> 10,000 mg/kg
Inhalation dusts and mists:	LC50	Rat (male, female)	4 hr	0.49 mg/L
Dermal:	LD50	Rabbit (male, female)	-	> 9400 mg/kg

Potential acute health effects

Ingestion:	Irritating to mouth, throat and stomach. Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.
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.
Skin contact:	Causes skin irritation. May cause an allergic skin reaction. Studies have shown that respiratory sensitisation can be induced via contact with respiratory sensitisers such as diisocyanates.
Eye contact:	Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics.

Ingestion:	No specific data.
Inhalation:	Respiratory tract irritation. Coughing wheezing and breathing difficulties. Asthma.
Skin contact:	Irritation, redness.
Eye contact:	Pain or irritation, watering, redness.

Section 12 Ecological information
12.1. Toxicity

	Test	Species	Duration	Result
Acute fish toxicity:	LCO	<i>Brachydanio rerio</i>	96 hours	> 1000 mg/L
Toxicity for daphnia	EC50		24 hours	> 1000 mg/L
Acute bacteria toxicity:	EC50	Activated sludge microorganisms.	24 hours	> 100 mg/L

12.2. Persistence and biodegradability

Reacts with water at the interface producing CO₂ 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 data available

12.5. Result of PBT and vPvB assessment

No data available

12.6. Other adverse effects

None known.

Section 13 Disposal considerations
13.1. Waste treatment methods

Product: 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. Waste is considered hazardous.

Packaging: 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).

Local legislation

Waste catalogue:

Waste code:

EU Waste Disposal Code (EWC)

08 05 01*, Waste isocyanates

16 03 05*, Organic wastes containing dangerous substances

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

Section 14 Transport information**14.1. UN Number**

Not regulated under transport regulation.

14.2. UN proper shipping name

Not regulated under transport regulation.

14.3. Transport hazard class(es)

Not regulated under transport regulation.

14.4. Packing group

Not regulated under transport regulation.

14.5. Environmental hazards

Not regulated under transport regulation.

14.6. Special precautions for user

Not classified as hazardous for transport.

14.7. Maritime transport in bulk according to IMO instruments

No data available

Section 15 Regulatory information

This Safety Data Sheet has been prepared in accordance with the requirements of regulation (EC) No 1907/2006 as amended.

The Workplace exposure Limit given in section 8 has been taken from the UK HSE document: EH40/2005 Workplace Exposure Limits as amended.

Relevant regulations:

Regulation (EC) 1272/2008 (EU 'CLP' regulation)

Regulation (EC) 790/2009 First Adaptation to Technical Progress (ATP) for CLP regulation

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

None applicable.

15.2. Chemical safety assessment

A chemical safety assessment has not been undertaken for this mixture.

Section 16 Other information**Risk Phrases / 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.

This SDS (version 4.0) is the 4th 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.