

# SAFETY DATA SHEET

## DIAMOND HARDENER

Infosafe No.: LQ7QP  
ISSUED Date: 23/03/2017  
Issued by: COATING TECHNOLOGIES LTD

### 1. IDENTIFICATION

**GHS Product Identifier**

DIAMOND HARDENER

**Product Code**

56-4000

**Company Name**

COATING TECHNOLOGIES LTD

**Address**

16 Aetna Place Henderson  
Auckland 0612 NZ

**Telephone/Fax Number**

Tel: +64 9 837 0897  
Fax: (09) 837 3736

**Emergency phone number**

+64 9 837 0897

**Recommended use of the chemical and restrictions on use**

Hardener for Polyurethane Dispersion

### 2. HAZARD IDENTIFICATION

**GHS classification of the substance/mixture**

Classified as Hazardous according to the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001, New Zealand.  
Not classified as Dangerous Goods for transport according to the New Zealand Standard NZS 5433:2012 Transport of Dangerous Goods on Land.

3.1D Flammable liquids: low hazard

6.5B Substance that is a contact sensitiser

9.1C Substance that is harmful in the aquatic environment

**Signal Word (s)**

WARNING

**Hazard Statement (s)**

H227 Combustible liquid.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

**Pictogram (s)**

Exclamation mark

**Precautionary statement – Prevention**

P103 Read label before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

#### Precautionary statement – Response

P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P363 Wash contaminated clothing before reuse.  
P370+P378 In case of fire: Use water spray (fog), foam, dry chemical or CO<sub>2</sub> for extinction.

#### Precautionary statement – Storage

P403+P235 Store in a well-ventilated place. Keep cool.

#### Precautionary statement – Disposal

P501 In the case of a substance that is in compliance with a HSNO approval other than a Part 6A (Group Standards) approval, a label must provide a description of one or more appropriate and achievable methods for the disposal of a substance in accordance with the Hazardous Substances (Disposal) Regulations 2001. This may also include any method of disposal that must be avoided. See Section 13 for disposal details.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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#### Ingredients

Name	CAS	Proportion
Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked	160994-68-3	50-<70 %
Hexamethylene diisocyanate	822-06-0	0-<0.1 %

### 4. FIRST-AID MEASURES

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#### Inhalation

If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

#### Ingestion

Do not induce vomiting. Wash out mouth thoroughly with water. Seek medical attention.

#### Skin

Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek medical attention.

#### Eye contact

If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for several minutes until all contaminants are washed out completely. If symptoms develop and/or persist seek medical attention.

#### First Aid Facilities

Eyewash and normal washroom facilities.

#### Advice to Doctor

Treat symptomatically.

#### Other Information

For advice in an emergency, contact a Poisons Information Centre (Phone New Zealand 0800 POISON / 0800 764 766) or a doctor at once.

### 5. FIRE-FIGHTING MEASURES

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#### Suitable Extinguishing Media

Water spray (fog), foam, dry chemical or CO<sub>2</sub>

#### Unsuitable Extinguishing Media

High volume water jet.

### **Hazards from Combustion Products**

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including carbon monoxide, carbon dioxide, isocyanate vapours, traces of hydrogen cyanide and oxides of nitrogen.

### **Specific Hazards Arising From The Chemical**

This product will burn under fire conditions.

### **Decomposition Temperature**

Not available

### **Precautions in connection with Fire**

Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

## **6. ACCIDENTAL RELEASE MEASURES**

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### **Emergency Procedures**

Wear appropriate personal protective equipment and clothing to prevent exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill. Place inert absorbent, non-combustible material onto spillage such as sawdust, chemical binder based on calcium silicate hydrate, sand. Remove mechanically. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

## **7. HANDLING AND STORAGE**

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### **Precautions for Safe Handling**

Avoid inhalation of vapours and mists, and skin or eye contact. Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of mists or vapours in the work atmosphere. Do not use near ignition sources. Do not pressurise, cut, heat or weld containers as they may contain hazardous residues. Maintain high standards of personal hygiene by washing hands prior to eating, drinking, smoking or using toilet facilities.

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

Store in a cool, dry, well-ventilated area away from sources of ignition, oxidising agents, strong acids, foodstuffs, and clothing. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Take precautions against static electricity discharges. Use proper grounding procedures. Ensure that storage conditions comply with applicable local and national regulations

For information on the design of the storeroom, reference should be made to Australian Standard AS1940 - The storage and handling of flammable and combustible liquids.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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### **Occupational exposure limit values**

No exposure standards have been established for this material. However, the available exposure limits for ingredients are listed below:

Isocyanates, all (as-NCO)

TWA : 0.02 mg/m<sup>3</sup>

STEL : 0.07 mg/m<sup>3</sup>

NOTICES: Sen

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

'Sen' Notice: The substance may cause sensitisation by skin contact or by inhalation

### **Biological Limit Values**

No biological limits allocated.

### Appropriate Engineering Controls

This substance is hazardous and should be used with a local exhaust ventilation system, drawing vapours away from workers' breathing zone. A flame-proof exhaust ventilation system is required. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn. Refer to relevant regulations for further information concerning ventilation requirements.

Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS/NZS 60079.10.1:2009 Explosive atmospheres - Classification of areas - Explosive gas atmospheres, for further information concerning ventilation requirements.

### Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements.

Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

### Eye Protection

Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations.

Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

### Hand Protection

Wear gloves of impervious material such as Butyl rubber, thickness  $\geq 0.5$  mm, breakthrough time  $\geq 480$  min; Fluorinated rubber, thickness  $\geq 0.4$  mm, breakthrough time  $\geq 480$  min. Final choice of appropriate gloves will vary according to individual circumstances. i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.

Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

### Body Protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Form	Liquid	Appearance	Colourless clear liquid
Colour	Colourless clear	Odour	Slight inherent odour
Decomposition Temperature	Not available	Melting Point	Not available
Boiling Point	~175°C (DIN 53171)	Solubility in Water	Immiscible with water (15°C)
Specific Gravity	Not available	pH	Not available
Vapour Pressure	~15hPa (20°C) (EG A4) ~24hPa (50°C) (EG A4) ~27hPa (55°C) (EG A4)	Vapour Density (Air=1)	Not available
Evaporation Rate	Not available	Odour Threshold	Not available
Viscosity	See Dynamic viscosity	Pour Point	<-60°C (ISO 3016)
Partition Coefficient: n-octanol/water	Not available	Density	~1.06 g/cm <sup>3</sup> (20°C) (DIN 51757)
Flash Point	~61°C (DIN EN ISO 2719)	Flammability	Combustible
Auto-Ignition Temperature	~300°C (ignition temperature) (DIN 51794)	Flammable Limits - Lower	Not available
Flammable Limits - Upper	Not available	Dynamic Viscosity	~91mPa.s (20°C) (DIN 53019)

## 10. STABILITY AND REACTIVITY

### Reactivity

Reacts with incompatibles.

**Chemical Stability**

Stable under normal conditions of storage and handling.

**Conditions to Avoid**

Heat, flames and other sources of ignition.

**Incompatible materials**

Exothermic reaction with amines and alcohols; reacts slowly with water forming CO<sub>2</sub>, in closed containers risk of bursting owing to increase of pressure.

**Hazardous Decomposition Products**

Thermal decomposition may result in the release of toxic and/or irritating fumes.

**Possibility of hazardous reactions**

Reacts with incompatibles.

**Hazardous Polymerization**

Not available.

## 11. TOXICOLOGICAL INFORMATION

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**Toxicology Information**

Toxicity data for material given below.

**Acute Toxicity - Oral**

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

LD50(rat): >2000mg/kg

Studies of a comparable product

**Acute Toxicity - Inhalation**

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

LD50(rat, female): 0.39mg/l/4h

Test atmosphere, dust/mist

Method: OECD Test Guideline 403

Studies of a comparable product

The substance was tested in a form (i.e. specific particle size distribution) that is different from the form in which the substance is placed on the market and in which it can reasonably be expected to be used. Based on the "split entry" concept and available data on particle size during end-use of the substance a modified classification for acute inhalation toxicity is justified.

**Ingestion**

Ingestion may cause irritation to the gastric tract, with stomach pain, nausea and vomiting.

**Inhalation**

Inhalation of product vapours may cause irritation of the nose, throat and respiratory system.

**Skin**

May cause an allergic skin reaction.

**Primary skin irritation**

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

Species: rabbit

Result: slight irritant

Method: OECD Test Guideline 404

Studies of a comparable product

**Eye**

May be irritating to eyes. The symptoms may include redness, itching and tearing.

**Primary mucosae irritation**

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

Species: rabbit

Result: slight irritant

Method: OECD Test Guideline 405

Studies of a comparable product

**Respiratory sensitisation**

Not expected to be a respiratory sensitiser.

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

No pulmonary sensitisation observed in animal tests.

No pulmonary sensitisation potential was observed in guinea pigs after either intradermal or inhalative induction with polyisocyanate based on hexamethylene diisocyanate.

**Skin Sensitisation**

May cause an allergic skin reaction.

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

Skin sensitisation according to Magnusson/Kligmann (maximizing test):

Species: guinea pig

Result: positive

Method: OECD Test Guideline 406

Studies of a comparable product.

**Germ cell mutagenicity**

Not considered to be a mutagenic hazard.

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

Test type: Salmonella/microsome test (Ames test)

Result: No indication of mutagenic effects.

Method: OECD Test Guideline 471

Studies of a comparable product.

**Carcinogenicity**

Not considered to be a carcinogenic hazard.

**Reproductive Toxicity**

Not considered to be toxic to reproduction.

**STOT-single exposure**

Not expected to cause toxicity to a specific target organ.

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

May cause respiratory irritation

Studies of a comparable product

**STOT-repeated exposure**

Not expected to cause toxicity to a specific target organ.

**Aspiration Hazard**

Not expected to be an aspiration hazard.

**Other Information**

Additional information:

Special properties/effects: Over-exposure especially when spraying coatings containing isocyanate without the necessary precautions, entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations

Prolonged contact with the skin may cause tanning and irritant effects.

Animal tests and other research indicate that skin contact with di-isocyanates can play a role in causing isocyanate sensitization and respiratory reaction.

## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity**

Harmful to aquatic life with long lasting effects.

**Persistence and degradability**

Biodegradability:

hydrophilic aliphatic polyisocyanate

Biodegradation: 2 %, 28 d, i.e. not degradable

Method: OECD Test Guideline 301 F

Studies of a comparable product.

**Mobility**

Not available

**Bioaccumulative Potential**

Not available

**Other Adverse Effects**

Not available

**Environmental Protection**

Prevent this material entering waterways, drains and sewers.

**Acute Toxicity - Fish**

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

LC50 (Danio reio (Zebra fish)): 28.3mg/l/96h

OECD Test Guideline 203

Studies of a comparable product

**Acute Toxicity - Daphnia**

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

EC50 (Daphnia magna (water flea)): >100mg/l/48h

OECD Test Guideline 202

Studies of a comparable product

**Acute Toxicity - Algae**

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

IC50 (scenedesmus subspicatus): >100mg/l/72h

OECD Test Guideline 201

Studies of a comparable product

**Acute Toxicity - Bacteria**

Hexane, 1,6-diisocyanato-, homopolymer, polyethylene glycol mono-Me ether-blocked

EC50 (activated sludge): >10,000mg/l

OECD Test Guideline 209

Studies of a comparable product

**Other Information**

Isocyanate reacts with water at the interface forming CO<sub>2</sub> and a solid insoluble product with high melting point (poly-urea). This reaction is accelerated by surfactants (e.g. detergents) or by water soluble solvents. Previous experience shows that poly-urea is inert and non-degradable.

## 13. DISPOSAL CONSIDERATIONS

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**Disposal considerations**

The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

Product Disposal:

Product wastes are controlled wastes and should be disposed of in accordance with all applicable local and national regulations.

This product can be disposed through a licensed commercial waste collection service. In this specific case the product is a combustible substance and therefore can be sent to an approved high temperature incineration plant for disposal.

Personal protective clothing and equipment as specified in Section 8 of this SDS must be worn during handling and disposal of this product. The ventilation requirements as specified in the same section must also be followed, and the precautions given in Section 7 of this SDS regarding handling must also be followed.

Do not dispose into the sewerage system. Do not discharge into drains or watercourses or dispose where ground or surface waters may be affected.

In New Zealand, the disposal agency or contractor must comply with the New Zealand Hazardous Substances (Disposal) Regulations 2001. Further details regarding disposal can be obtained on the EPA New Zealand website under specific group standards.

Container Disposal:

The container or packaging must be cleaned and rendered incapable of holding any substance. It can then be disposed of in a manner consistent with that of the substance it contained. In this instance the packaging can be disposed through a commercial waste collection service.

Alternatively, the container or packaging can be recycled if the hazardous residues have been thoroughly cleaned or rendered non-hazardous.

In New Zealand, the packaging (that may or may not hold any residual substance) that is lawfully disposed of by householders or other consumers through a public or commercial waste collection service is a means of compliance with regulations.

## 14. TRANSPORT INFORMATION

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### Transport Information

Not classified as Dangerous Goods for transport according to the New Zealand Standard NZS 5433:2012 Transport of Dangerous Goods on Land.

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

### U.N. Number

None Allocated

### UN proper shipping name

None Allocated

### Transport hazard class(es)

None Allocated

### Special Precautions for User

Not available

### IMDG Marine pollutant

No

### Transport in Bulk

Not available

## 15. REGULATORY INFORMATION

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### Regulatory information

Classified as Hazardous according to the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001, New Zealand.  
Group standard: Surface Coatings and Colourants (Combustible) Group Standard 2006

### HSNO Approval Number

HSR002657

## 16. OTHER INFORMATION

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### Date of preparation or last revision of SDS

SDS Created: March 2017

### References

Workplace Exposure Standards and Biological Exposure Indices.

Transport of Dangerous goods on land NZS 5433.

Preparation of Safety Data Sheets - Approved Code of Practice Under the HSNO Act 1996 (HSNO CoP 8-1 09-06).

Assigning a hazardous substance to a group standard.

American Conference of Industrial Hygienists (ACGIH).

## END OF SDS

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