

# Material Safety Data Sheet

## NUTHANE HARDENER

<b>Infosafe</b> NLX15	<b>Version</b>	<b>ISSUED</b>	December	<b>Status</b> ISSUED
<b>No.</b>	<b>No.</b>	<b>Date</b>	2009	by
				NUPLEXIN

Classified as hazardous according to criteria of NOHSC

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name**

NUTHANE HARDENER

**Product Code**

B1NTH

**Company Name**

NUPLEX INDUSTRIES LIMITED

**Address**

12 Industry Road, PENROSE, Auckland  
Australia: 49-61 Stephen Rd, Botany, NSW 2019

**Emergency Tel.**

New Zealand: 0800 154 666 (24H); Australia: 1800 022 037 (24H)

**Telephone/Fax Number**

Tel: New Zealand: (09) 579 2029; Australia: (02) 9666 0331 Fax: New Zealand: (09) 525 1618; Australia: (02) 9666 3368

**Recommended Use**

Component of a Polyurethane System.

**Other Names**

None Listed

### 2. HAZARDS IDENTIFICATION

**Hazard Classification**

Australia:

Classified as Hazardous according to criteria of National Occupational Health & Safety Commission, Australia (NOHSC).

Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

New Zealand:

Classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.

Not classified as Dangerous Goods for transport according to the NZS 5433:2007 Transport of Dangerous Goods on Land.

HSNO Classification:

6.1B - Substance that is acutely toxic (Inhalation)

6.1E - Substance that is acutely toxic (Oral)

6.3A - Substance that is irritating to the skin

- 6.4A - Substance that is irritating to the eyes
- 6.5A - Substance that is a respiratory sensitiser
- 6.5B - Substance that is a contact sensitiser
- 6.9A - Substance that is toxic to human target organs or systems (repeated exposure)

**Hazard statement codes:**

- H330 Fatal if inhaled.
- H303 May be harmful if swallowed.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H370 Causes damage to organs by inhalation.
- H315 Causes skin irritation.
- H320 Causes eye irritation.
- H317 May cause an allergic skin reaction.

**Precautionary statement codes - Prevention:**

- P102 Keep out of reach of children.
- P103 Read label before use. - This statement applies only where the substance is available to the general public.
- P104 Read Safety Data Sheet before use.
- P260 Do not breathe fume/gas/mist/vapours/spray.
- P264 Wash hands and skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P280 Wear protective gloves/eye protection/face protection.
- P284 Wear respiratory protection.
- P285 In case of inadequate ventilation wear respiratory protection.

**Precautionary statement codes - Response:**

- SKIN
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P362 Take off contaminated clothing and wash before re-use.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- EYE
- 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.
- INHALATION
- P304+P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
- P310 Immediately call a POISON CENTER or doctor/physician.
- P331 Do NOT induce vomiting.
- INGESTION
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P331 Do NOT induce vomiting.

**Precautionary statement codes - Storage:**

- P403+P233 Store in a well-ventilated place. Keep container tightly closed. - This statement applies if+ the substance is volatile so as to generate a hazardous atmosphere.
- P405 Store locked up.

**Precautionary statement codes - 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.

**Risk Phrase(s)**

- R20 Harmful by inhalation.
- R40 Limited evidence of a carcinogenic effect.
- R42/43 May cause sensitisation by inhalation and skin contact.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R36/37/38 Irritating to eyes, respiratory system and skin.

**Safety Phrase(s)**

- S23 Do not breathe gas/fumes/vapour/spray
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S45 In case of accident or if you feel unwell seek medical advice immediately
- S24/25 Avoid contact with skin and eyes.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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#### Ingredients

Name	CAS	EINECS	Proportion
Diphenylmethane-4,4'- diisocyanate	101-68-8	202-966-0	30-60 %
Polymethylenepolyphenyl isocyanate	9016-87-9	615-005-01-6	30-60 %
Diphenyl methane-2,4'- diisocyanate	5873-54-1	227-534-9	7-13 %

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### 4. FIRST AID MEASURES

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#### Inhalation

Remove affected person from contaminated area and if irritation persists, seek medical advice. If not breathing apply artificial respiration and seek urgent medical advice.

#### Ingestion

Do NOT induce vomiting. Wash out mouth with water. If symptoms develop seek medical attention.

#### Skin

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

#### Eye

If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical attention.

#### First Aid Facilities

Eye wash station and normal washroom facilities.

#### Advice to Doctor

Treat symptomatically.

#### Other Information

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 13 1126; New Zealand 0800 POISON / 0800 764 766) or a doctor at once.

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### 5. FIRE FIGHTING MEASURES

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#### Suitable Extinguishing Media

Use foam, carbon dioxide or dry chemical to extinguish fire.

#### Hazards from Combustion Products

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

#### Specific Hazards

Combustible liquid. This product will burn if exposed to fire.

#### 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.

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## 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. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water authorities and EPA in accordance with local regulations.

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## 7. HANDLING AND STORAGE

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### Precautions for Safe Handling

Avoid exposure. Wear appropriate protective clothing and equipment. Use in designated areas with local exhaust ventilation. DO NOT store or use in confined spaces. Build up of mists or vapours in the atmosphere must be prevented. Avoid breathing in spray or mists or vapours. Do not smoke. Exposure without protection must be prevented. Maintain high standards of personal hygiene ie. washing hands prior to eating, drinking, smoking or using toilet facilities.

### Conditions for Safe Storage

Store in a cool (15-25°C), dry, well-ventilated area away from moisture, sources of ignition, oxidising agents, strong acids, foodstuffs, and clothing. Keep containers closed when not in use and securely sealed and protected against physical damage. After opening container, it should be purged with dry nitrogen gas before resealing. 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. 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. Reference should also be made to all applicable local and national regulations.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### National Exposure Standards

No exposure value assigned for this specific material by the National Occupational Health and Safety Commission (NOHSC), Australia or the Occupational Safety and Health Service (OSH) of the New Zealand Department of Labour. However, the available exposure limits for ingredients are listed below:

National Occupational Health And Safety Commission (NOHSC), Australia Exposure Standards:

Substance TWA STEL NOTICES  
ppm mg/m<sup>3</sup> ppm mg/m<sup>3</sup>  
Isocyanates, all (as NCO) - 0.02 - 0.07 Sen

New Zealand Occupational Safety and Health Service (OSH) Workplace Exposure Standards:

Substance TWA STEL NOTICES  
ppm mg/m<sup>3</sup> ppm mg/m<sup>3</sup>  
Isocyanates, all (as NCO) - 0.02 - 0.07 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 limit allocated.

### Engineering Controls

This substance is toxic and should be used with a local exhaust ventilation system,

drawing vapours away from workers' breathing zone. Alternatively, a process enclosure system such as a fume cupboard should be employed. If the engineering controls are not sufficient to maintain concentrations of particulates below the exposure standards, suitable respiratory protection must be worn. If local exhaust ventilation is used, ensure sufficient air is replaced to compensate the air that has been removed. Refer to AS/NZS 2430.3.1:1997 : Classification of hazardous areas - Examples of area classification - General, 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 organic vapour filter should be used. Reference should be made to Australian/New Zealand 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 or face shield as appropriate recommended. Final choice of appropriate eye/face protection will vary according to individual circumstances ie. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337- Eye Protectors for Industrial Applications.

#### **Hand Protection**

Impervious gloves recommended. Final choice of appropriate gloves will vary according to individual circumstances ie. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161 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. Industrial clothing should conform to the specifications detailed in AS/NZS 2919: Industrial clothing.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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#### **Appearance**

Liquid.

#### **Odour**

Not available.

#### **Melting Point**

Not available

#### **Boiling Point**

> 300°C decomposes

#### **Solubility in Water**

Insoluble. Reacts with water.

#### **Specific Gravity**

Not available

#### **pH Value**

Not applicable

#### **Vapour Pressure**

Not available

#### **Vapour Density (Air=1)**

Not available

#### **Viscosity**

65 to 115 mPa.s @ 25°C

**Volatile Component**

Not available

**Flash Point**

220°C (Closed cup); 220°C (Open cup).

**Flammability**

Combustible liquid. (Australia: Class C2)

**Auto-Ignition Temperature**

Not available

**Flammable Limits - Lower**

Not available

**Flammable Limits - Upper**

Not available

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## 10. STABILITY AND REACTIVITY

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**Chemical Stability**

Stable under normal conditions.

**Conditions to Avoid**

Extremes of temperature and direct sunlight.

**Incompatible Materials**

Materials to avoid include water, materials containing active hydrogen groups, solvents, alcohols, amines, bases and acids.

**Hazardous Decomposition Products**

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including carbon monoxide, carbon dioxide and oxides on nitrogen.

**Hazardous Reactions**

Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures. Exothermic reactions may occur with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with, and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas.

**Hazardous Polymerization**

May occur at high temperatures (over 180°C), or in presence of water or strong alkalies.

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## 11. TOXICOLOGICAL INFORMATION

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**Toxicology Information**

No toxicity data is available for this product.

**Inhalation**

Harmful if inhaled. Inhalation may cause sensitisation, and asthma-like symptoms in some individuals. Inhalation of product vapours will cause irritation of the nose, throat and respiratory system. Inhalation may cause headaches, nausea, vomiting and dizziness, coughing, difficulty in breathing and tightness in chest.

**Ingestion**

May cause irritation of the gastrointestinal system. Symptoms may include nausea,

vomiting and diarrhoea.

**Skin**

Irritating to skin. Symptoms may include redness and itchiness. Repeated or prolonged skin contact may lead to dermatitis. May cause sensitisation by skin contact.

**Eye**

Irritating to eyes. Symptoms may include redness, excessive tearing, stinging and swelling.

**Chronic Effects**

Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in chronic pulmonary irritation at high concentrations. Only at the top level (6mg/m<sup>3</sup>), there was a significant incidence of a benign tumour of the lung (ademonoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1mg/m<sup>3</sup> and no effects at 0.2mg/m<sup>3</sup>. Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur. Industrial experience in humans has not shown any links between MDI exposure and cancer developments. There are reports that chronic exposure by inhalation may result in permanent decreases in lung function. No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal, respirable concentrations, which are well in excess of defined occupational exposure limits. There is no substantial evidence of mutagenic potential.

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity**

Not available

**Persistence / Degradability**

Not available

**Mobility**

Not available

**Environ.** Prevent this material entering waterways, drains and sewers.

**Protection****Acute Toxicity - Fish**

LC50 (Zebra Fish): >1000mg/L (96hours)

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## 13. DISPOSAL CONSIDERATIONS

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**Disposal Considerations**

Dispose of according to relevant government regulations.

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## 14. TRANSPORT INFORMATION

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**Transport Information****Australia:**

Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

**New Zealand:**

Not classified as Dangerous Goods for transport according to the NZS 5433:2007 Transport of Dangerous Goods on Land.

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## 15. REGULATORY INFORMATION

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### Regulatory Information

Australia:

Classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia.

Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

### Poisons Schedule

S6

### National and or International Regulatory Information

New Zealand:

Classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.

Group standard:

Additives, Process Chemicals and Raw Materials (Toxic [6.1], Corrosive) Group Standard 2006

HSNO Approval Number: HSR002510.

### Hazard Category

Harmful, Irritant, Carcinogenic (Category 3), Sensitising

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## 16. OTHER INFORMATION

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### Date of preparation or last revision of MSDS

MSDS reviewed: December 2009

Supersedes: January 2005

### Contact Person/Point

For specialist advice in emergencies: Australia 1800 022 037; New Zealand 0800 154 666.

IMPORTANT ADVICE: This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including its use in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Nuplex Industries (Aust) Pty Ltd. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

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End of MSDS

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