

## Safety Data Sheet 1,6-DIAMINOHEXANE

SDS no. DW88W8GH • Version 1.0 • Date of issue: 2023-11-10

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### SECTION 1: Identification

#### GHS Product identifier

Product name 1,6-DIAMINOHEXANE

#### Other means of identification

1,6-DIAMINOHEXANE LR  
Hexamethylenediamine  
1,6-Hexanediamine

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

Formation of high polymers, such as nylon 66.

#### Supplier's details

Name ChemSupply Australia Pty Ltd  
Address 38-50 Bedford Street  
5013 Gillman South Australia  
Australia  
  
Telephone 08 8440 2000  
email [www.chemsupply.com.au](http://www.chemsupply.com.au)

#### Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

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### SECTION 2: Hazard identification

#### General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

#### Classification of the substance or mixture

#### GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, dermal, Cat. 4
- Acute toxicity, oral, Cat. 4
- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1B
- Specific target organ toxicity following single exposure, Cat. 3

**GHS label elements, including precautionary statements**

**Pictograms**



**Signal word**

**Danger**

**Hazard statement(s)**

H302 Harmful if swallowed  
H312 Harmful in contact with skin  
H314 Causes severe skin burns and eye damage  
H335 May cause respiratory irritation

**Precautionary statement(s)**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell,  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P302+P352 IF ON SKIN: Wash with plenty of water/soap  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor/physician  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P501 Dispose of contents/container to an approved waste disposal facility

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**SECTION 3: Composition/information on ingredients**

**Substances**

Molecular weight: 116.21

**Components**

Component	CAS no.	Concentration
1,6-DIAMINOHEXANE (EC no.: 204-679-6; Index no.: 612-104-00-9)	124-09-4	100 % (weight)

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**SECTION 4: First-aid measures**

**Description of necessary first-aid measures**

General advice First Aid Facilities: Maintain eyewash fountain in work area.

If inhaled If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.

In case of skin contact Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.

In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

**Most important symptoms/effects, acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**Indication of immediate medical attention and special treatment needed, if necessary**

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

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**SECTION 5: Fire-fighting measures**

**Suitable extinguishing media**

Small fire: Use dry chemical, CO<sub>2</sub> or water spray. If safe to do so, move undamaged containers from the fire area.  
Large fire: Use dry chemical, CO<sub>2</sub>, water spray or foam - Do NOT use water jets.  
Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

**Specific hazards arising from the chemical**

Combustible. May emit toxic fumes in fire such as oxides of nitrogen and carbon.

May burn but does not ignite readily. Containers may explode when heated. When heated, vapours may form explosive mixtures with air. Contact with metals may evolve flammable hydrogen gas. Runoff may pollute waterways. Fire will produce irritating, poisonous and/or corrosive gases.

**Special protective actions for fire-fighters**

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

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**SECTION 6: Accidental release measures**

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

Evacuate the area of all non-essential personnel. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.  
Wear protective clothing specified for normal operations (see Section 8)

**Methods and materials for containment and cleaning up**

Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations. Prevent further leakage or spillage and prevent from entering drains

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**SECTION 7: Handling and storage**

**Precautions for safe handling**

Avoid inhalation and ingestion of dust. Avoid contact with skin. Avoid contact with eyes. Use product in presence of ventilation.

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

Protect and store away from moisture and direct sunlight.

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**SECTION 8: Exposure controls/personal protection**

**Appropriate engineering controls**

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Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

### Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

#### Skin protection

Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.

#### Body protection

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

#### Respiratory protection

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

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## SECTION 9: Physical and chemical properties

### Basic physical and chemical properties

Physical state	Solid
Appearance	White crystalline solid.
Color	No data available.
Odor	Odour of piperidine.
Odor threshold	No data available.
Melting point/freezing point	39 - 42 °C
Boiling point or initial boiling point and boiling range	204 - 205 °C
Flammability	No data available.
Lower and upper explosion limit/flammability limit	Flammable Limits - Lower: 0.9 Vol% Flammable Limits - Upper: 7.6 Vol%
Flash point	84 °C; closed cup
Explosive properties	No data available.
Auto-ignition temperature	305 °C
Decomposition temperature	204 - 205 °C (boiling point)
Oxidizing properties	No data available.
pH	12.4 (100 g/l, H <sub>2</sub> O, 20 °C)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Very soluble. Solubility in Organic Solvents: Slightly soluble in alcohol and benzene.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	27 hPa @ 100 °C
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 0.84
Relative vapor density	No data available.
Particle characteristics	No data available.

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### Supplemental information regarding physical hazard classes

No data available.

### Further safety characteristics (supplemental)

No data available.

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## SECTION 10: Stability and reactivity

### Reactivity

Stable under normal conditions of storage and handling.

### Chemical stability

Stable. Absorbs water and carbon dioxide from the air.

### Possibility of hazardous reactions

Hazardous Polymerization: Will not occur.

### Conditions to avoid

Strong heating.

### Incompatible materials

Strong oxidisers, acids, acid chlorides, acid anhydrides, acid halides and carbon dioxide.

### Hazardous decomposition products

Oxides of carbon and nitrogen. Ammonia.

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

Acute Toxicity - Oral: LD50(rat): 850 mg/kg (IUCLID)

Ingestion: Harmful if swallowed. Burns to the mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract with symptoms of burning, sneezing and coughing.

Inhalation: Harmful by inhalation. Inhalation of dust may result in respiratory irritation to the mucous membranes and upper respiratory tract. Symptoms include of coughing and dyspnoea.

#### Skin corrosion/irritation

Acute Toxicity - Dermal: LD50(rabbit): 1110 mg/kg (IUCLID)

Harmful by skin absorption. Causes burns. May cause allergic response. Symptoms include of inflammation, blistering, itching, scaling and reddening.

#### Serious eye damage/irritation

Eye contact with the material causes burns. May cause permanent eye damage and blindness. Symptoms include of redness, watering and itching.

#### Respiratory or skin sensitization

No data available.

#### Germ cell mutagenicity

No data available.

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### Carcinogenicity

No data available.

### Reproductive toxicity

No data available.

### Summary of evaluation of the CMR properties

No data available.

### Specific target organ toxicity (STOT) - single exposure

May cause respiratory irritation.

### Specific target organ toxicity (STOT) - repeated exposure

No data available.

### Aspiration hazard

No data available.

### Additional information

Chronic Effects: Prolonged or repeated exposure can produce lung damage, choking, unconsciousness and even death. Exposure to high concentrations of this material may result in extensive organ damage, liver and kidney injury and anaemia. Risk of perforation in the oesophagus and stomach.

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## SECTION 12: Ecological information

### Toxicity

Acute Toxicity - Fish: LC50(L. idus): 62 mg/l/96 h (IUCLID)

Acute Toxicity - Daphnia: EC50(Daphnia magna): 23.4 mg/l/48 h (IUCLID)

[8Z] Acute Toxicity - Algae: IC50(Selenastrum capricornutum): 15 mg/l/72 h.

### Persistence and degradability

Readily degradable. 98%/8d.

### Bioaccumulative potential

No bioaccumulation is to be expected ( $\log P(o/w) < 1$ ).

### Mobility in soil

No data available.

### Results of PBT and vPvB assessment

No data available.

### Endocrine disrupting properties

No data available.

### Other adverse effects

No data available.

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## SECTION 13: Disposal considerations

### Disposal methods

### Product disposal

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Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

### Sewage disposal

No bioaccumulation is to be expected ( $\log P(o/w) < 1$ ).

### Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

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## SECTION 14: Transport information

### ADG (Road and Rail)

UN Number: 2280

Class: 8

Packing Group: III

Proper Shipping Name: HEXAMETHYLENE DIAMINE, SOLID

### Hazchem emergency action code (EAC)

2X

### IMDG

UN Number: 2280

Class: 8

Packing Group: III

EMS Number:

Proper Shipping Name: HEXAMETHYLENE DIAMINE, SOLID

### IATA

UN Number: 2280

Class: 8

Packing Group: III

Proper Shipping Name: HEXAMETHYLENE DIAMINE, SOLID

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## SECTION 15: Regulatory information

### Safety, health and environmental regulations specific for the product in question

#### Australia SUSMP

Poison Schedule: NS

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## SECTION 16: Other information

### Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

### Preparation information

All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), [hcis.safeworkaustralia.gov.au](http://hcis.safeworkaustralia.gov.au)

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)