

# Material Safety Data Sheet

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Infosafe No™ 1CHON Issue Date : July 2008 -ISSUED by CHEMSUPP CS: 1.4.21

Product Name **HEXAMINE**

Classified as hazardous according to criteria of NOHSC

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name** HEXAMINE

**Company Name** CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)

**Address** 50 Bedford Street GILLMAN  
SA 5013 Australia

**Telephone/Fax Number** Tel: (08) 8440-2000  
Fax: (08) 8440-2001

**Recommended Use** Curing of phenolformaldehyde and resorcinolformaldehyde resins, rubber-to-textile adhesives, protein modifier, organic synthesis, pharmaceuticals, ingredient of highly explosive cyclonite, fuel tablets, rubber accelerator, fungicide, corrosion inhibitor, shrink-proofing textiles, antibacterial and laboratory reagent.

**Other Names**

<u>Name</u>	<u>Product Code</u>
HEXAMINE LR	HL019
HEXAMINE AR	HA019
Hexamethylenetetramine	
Methenamine	
HMTA	
Aminoform	
Hexamine	

**Other Information** EMERGENCY CONTACT NUMBER: +61 08 8440 2000  
Business hours: 8:30am to 5:00pm, Monday to Friday.

Chem-Supply 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 Chem-Supply 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 Chem-Supply 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.

## 2. HAZARDS IDENTIFICATION

**Hazard Classification** Classified as hazardous according to criteria of NOHSC  
HAZARDOUS SUBSTANCE.  
DANGEROUS GOODS.  
Hazard classification according to the criteria of NOHSC.  
Dangerous goods classification according to the Australia Dangerous Goods Code.

**Risk Phrase(s)** Classified as hazardous according to criteria of NOHSC  
R11 Highly flammable.  
R42/43 May cause sensitisation by inhalation and skin contact

**Safety Phrase(s)** S16 Keep away from sources of ignition - No smoking.  
S22 Do not breathe dust.  
S24 Avoid contact with skin.  
S37 Wear suitable gloves.

**Medical Conditions Generally Aggravated by Exposure** Persons with pre-existing eye or skin conditions or impaired pulmonary function may be more susceptible to the effects of this product.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical Characterization** Solid.

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Hexamine 100-97-0 100 % Xn, F R11, R42/43

## 4. FIRST AID MEASURES

<b>Inhalation</b>	Remove victim to fresh air. Seek medical attention.
<b>Ingestion</b>	Rinse mouth thoroughly with water immediately. If swallowed, do NOT induce vomiting. Seek medical attention.
<b>Skin</b>	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.
<b>Eye</b>	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek medical advice.
<b>First Aid Facilities</b>	Maintain eyewash fountain and drench facilities in work area.
<b>Advice to Doctor</b>	Treat symptomatically.
<b>Other Information</b>	If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 13 1126 from anywhere in Australia.

## 5. FIRE FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Alcohol resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
<b>Special Protective Equipment for fire fighters</b>	Full protective clothing and self-contained breathing apparatus.
<b>Specific Methods</b>	Small fire: Use dry chemical, CO2, water spray or foam. Large fire: Use water spray, fog or foam. If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out.
<b>Specific Hazards</b>	May be ignited by friction, heat, sparks or flame. Vapours, dust or turnings may form explosive mixtures with air. May burn fiercely. May re-ignite after fire is extinguished. Fire may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Runoff may pollute waterways. May be transported in a molten form. Solids may melt and flow when heated or involved in a fire.
<b>Hazchem Code</b>	1[Z]
<b>Precautions in connection with Fire</b>	Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.
<b>Other Information</b>	Flammable.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Spills &amp; Disposal</b>	Eliminate all ignition sources (no smoking, flares, sparks or flame) within at least 15m. Do NOT touch or walk through spilled product. Prevent entry into waterways, drains or confined areas. Obtain expert advice on use of water as spilled material may be water-reactive. Prevent dust cloud. Use clean non-sparking tool to collect absorbed material and place into loosely-covered metal or plastic containers for later disposal. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
<b>Personal Precautions</b>	Avoid raising a dust cloud. Ventilate contaminated area thoroughly.
<b>Environmental Precautions</b>	Prevent further leakage and spillage

## 7. HANDLING AND STORAGE

<b>Precautions for Safe Handling</b>	Use in well ventilated areas away from all ignition sources. Take precautionary measures against static discharges.
<b>Conditions for Safe Storage</b>	Store in a cool, dry place. Store away from sources of heat or ignition. Keep containers closed at all times.
<b>Storage Temperatures</b>	Store at room temperature (15 to 25 °C recommended).

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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<b>Other Exposure Information</b>	<p>Hexamine could decompose to formaldehyde, which is a listed potential carcinogen.</p> <p>TWA: 1 mg/m<sup>3</sup> (1.2 ppm); STEL: 2 mg/m<sup>3</sup> (2.5 ppm) - Formaldehyde - Worksafe Aust.</p> <p>A time weighted average (TWA) has been established for Formaldehyde (Worksafe Aust) of 1.0 mg/m<sup>3</sup>, (1.2 ppm). The corresponding STEL level is 2.0 mg/m<sup>3</sup>, (2.5 ppm). The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.</p> <p>Note: Substance is known to act as sensitiser.</p> <p>Some substances can cause a specific immune response in some people. Such substances are called sensitisers and the development of a specific immune response is termed 'sensitisation'. Exposure to a sensitiser, once sensitisation has occurred, may manifest itself as a skin rash or inflammation or as an asthmatic condition, and in some individuals this reaction can be extremely severe. See Chapter 12: Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment, published by Worksafe Australia.</p> <p>Carcinogen Category 2 - Probable human carcinogen - Worksafe Aust. Category 2. Probable human carcinogen for which there is sufficient evidence to provide a strong presumption that human exposure might result in the development of cancer. This evidence is generally based on appropriate long term animal studies, limited epidemiological evidence or other relevant information. See Chapter 13: Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment, published by Worksafe Australia.</p>
<b>Engineering Controls</b>	Maintain concentration below recommended exposure limit. Open containers and use in a fume cupboard only.
<b>Respiratory Protection</b>	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.
<b>Eye Protection</b>	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.
<b>Hand Protection</b>	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.
<b>Footwear</b>	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
<b>Body Protection</b>	Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
<b>Hygiene Measures</b>	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Form</b>	Solid.
<b>Appearance</b>	White crystalline powder or colourless lustrous crystals.
<b>Odour</b>	Odourless.
<b>Melting Point</b>	280 °C (536 °F)
<b>Boiling Point</b>	Not available.

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<b>Solubility in Water</b>	895 g/l (20 °C)
<b>Solubility in Organic Solvents</b>	Soluble in alcohol and chloroform. Insoluble in ether.
<b>Specific Gravity</b>	1.33 g/cm <sup>3</sup>
<b>pH Value</b>	7 - 9 (100g/l, H <sub>2</sub> O, 20 °C)
<b>Flash Point</b>	250 °C
<b>Flammability</b>	Flammable.
<b>Auto-Ignition Temperature</b>	410 °C
<b>Molecular Weight</b>	140.19
<b>Other Information</b>	Sublimes approximately 200 °C. Explosive limits 20 g/m <sup>3</sup> (dust).

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under normal conditions. Moisture sensitive. Hygroscopic.
<b>Conditions to Avoid</b>	Heat, flames, ignition sources and incompatibles.
<b>Incompatible Materials</b>	Oxidising agents Acids. Peroxide compounds.
<b>Hazardous Decomposition Products</b>	Nitrogen, water, formaldehyde and oxides of carbon.
<b>Hazardous Polymerization</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Toxicology Information</b>	Oral LD50 (rat): 9200 mg/kg
<b>Inhalation</b>	May cause sensitisation by inhalation. May cause irritation to the respiratory tract, coughing, shortness of breath, sore throat and runny nose.
<b>Ingestion</b>	May cause gastroenteritis with abdominal pain, nausea, vomiting and diarrhea. Systemic effects may follow and may include ringing of the ears, dizziness, elevated blood pressure, blurred vision and tremors.
<b>Skin</b>	May cause sensitisation by skin contact. May cause irritation with symptoms of redness, swelling, itching and pain.
<b>Eye</b>	May cause irritation with symptoms of redness, swelling, itching, tearing and pain.
<b>Chronic Effects</b>	Prolonged skin contact may produce a rash.

## 12. ECOLOGICAL INFORMATION

<b>Acute Toxicity - Fish</b>	P. promelas CL50: 49.8g/l /96hr.
<b>Acute Toxicity - Daphnia</b>	Daphnia magna EC50: 36g/l /48hr.
<b>Acute Toxicity - Algae</b>	Selenastrum capricornutum IC0 : 1500 mg/l /14d.
<b>Acute Toxicity - Bacteria</b>	Pseudomonas fluorescens EC0 : >= 5000 mg/l /16h.
<b>Other Information</b>	Bioaccumulative potential: Low probability of bioaccumulation (log P(o/w)<1). Persistence and degradability: Biological degradability - good.

## 13. DISPOSAL CONSIDERATIONS

<b>Disposal Considerations</b>	Dispose of according to relevant local, state and federal government regulations.
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## 14. TRANSPORT INFORMATION

<b>Transport Information</b>	Dangerous goods of Class 4.1 (Flammable Solid) are incompatible in a placard load with any of the following:
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<b>U.N. Number</b>	Class 1, Class 2.1, Class 4.2, Class 5, Class 7. 1328
<b>Proper Shipping Name</b>	HEXAMETHYLENE TETRAMINE
<b>DG Class</b>	4.1
<b>Hazchem Code</b>	1[Z]
<b>Packaging Method</b>	3.8.4.1
<b>Packing Group</b>	III
<b>EPG Number</b>	4A1
<b>IERG Number</b>	20

## 15. REGULATORY INFORMATION

<b>Poisons Schedule</b>	S4
<b>Hazard Category</b>	Harmful, Highly Flammable

## 16. OTHER INFORMATION

**Contact Person/Point** Paul McCarthy Ph. (08) 8440 2000      **DISCLAIMER STATEMENT:**  
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 information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

**Empirical Formula & Structural Formula** (CH<sub>2</sub>)<sub>6</sub> N<sub>4</sub>

**Literature References**

Australian Government Department of Health and Ageing, 'Standard for the Uniform Scheduling of Drugs and Poisons No. 23', Commonwealth of Australia 2008.

Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997.

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007.

South Australia Government, 'Approved Code of Practice for the Labelling of Workplace Substances', 1995.

Standards Australia 'AS 1940-2004 The Storage and Handling of Flammable and Combustible Liquids.

Standards Australia, 'SAA/SNZ HB 76:2004 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, August 2004.

Worksafe Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)]', AusInfo, Canberra 2004.

Worksafe Australia, 'Hazardous Substances Information System, 2005'.

Worksafe Australia, 'National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]', AGPS, Canberra 1994.

Worksafe Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]', AusInfo, Canberra 1995.

<b>User Codes</b>	<b>User Field Title</b>	<b>User Code</b>
	CAS No.	100-97-0
	Risk Phrases	11-42/43
	Safety Phrases	16-22-24-37
	...End Of MSDS...	

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