

## Safety Data Sheet **HEXAMINE**

SDS no. FBQDSLTY • Version 1.0 • Date of issue: 2023-07-23

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### SECTION 1: Identification

#### GHS Product identifier

Product name **HEXAMINE**

#### Other means of identification

Hexamethylenetetramine

Methenamine

Urotropin

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

#### 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

- Flammable solids, Cat. 2
- Skin sensitizer, Cat. 1
- Respiratory sensitizer, Cat. 1

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H228

Flammable solid

H317

May cause an allergic skin reaction

H334

May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statement(s)

P210

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240

Ground and bond container and receiving equipment.

P241

Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P261

Avoid breathing dust/fume/gas/mist/vapors/spray.

P272

Contaminated work clothing should not be allowed out of the workplace.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P284

[In case of inadequate ventilation] wear respiratory protection.

P302+P352

IF ON SKIN: Wash with plenty of water/soap

P304+P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P333+P313

If skin irritation or rash occurs: Get medical advice/attention.

P342+P311

If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician

P362+P364

Take off contaminated clothing and wash it before reuse.

P370+P378

In case of fire: Use agents recommended in Section 5 of SDS for extinction

P501

Dispose of contents/container to an approved waste disposal facility

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

Mixtures

Molecular weight: 140.19

Components

Component	CAS no.	Concentration
Hexamethylenetetramine (EC no.: 202-905-8; Index no.: 612-101-00-2)	100-97-0	100 % (weight)
CLASSIFICATIONS: Flammable solids, Cat. 2; Skin sensitizer, Cat. 1. HAZARDS: H228 - Flammable solid; H317 - May cause an allergic skin reaction.		

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**SECTION 4: First-aid measures**

Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous 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. Immediately obtain medical aid if cough or other symptoms appear.

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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 medical advice if effects persist.

### 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.

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## SECTION 5: Fire-fighting measures

### Suitable extinguishing media

Small fire: Use dry chemical, CO<sub>2</sub>, 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.

### Specific hazards arising from the chemical

May form nitrogen oxides, ammonia or hydrogen cyanide.

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.

### 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

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.

### Environmental precautions

Prevent contamination of soil and water.

### Methods and materials for containment and cleaning up

Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.

Seek expert advice on handling and disposal.

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## SECTION 7: Handling and storage

### Precautions for safe handling

Use in well ventilated areas away from all ignition sources. Take precautionary measures against static discharges.

### Conditions for safe storage, including any incompatibilities

Store in a cool, dry place. Store away from sources of heat or ignition. Keep containers closed at all times.

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

### **Appropriate engineering controls**

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 and 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**

Appearance	White crystalline powder or colourless lustrous crystals.
Color	White
Odor	Amine like.
Odor threshold	No data available.
Melting point/freezing point	280 °C (536 °F)
Boiling point or initial boiling point and boiling range	Not available.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	250 °C closed cup.
Explosive properties	No data available.
Auto-ignition temperature	410 °C
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	7 - 9 (100g/l, H <sub>2</sub> O, 20 °C)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: 895 g/l (20 °C) Solubility in Organic Solvents: Soluble in alcohol and chloroform. Insoluble in ether.
Partition coefficient n-octanol/water (log value)	log Pow: -2.179 at 20 °C
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.33 g/cm <sup>3</sup> at 20°C

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Relative vapor density  
Particle characteristics

No data available.  
No data available.

### Supplemental information regarding physical hazard classes

No data available.

### Further safety characteristics (supplemental)

Other Information: Sublimes approximately 200 °C.  
Explosive limits 20 g/m<sup>3</sup> (dust).

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## SECTION 10: Stability and reactivity

### Reactivity

None under normal use conditions.

### Chemical stability

Stable under recommended storage conditions. Moisture sensitive

### Possibility of hazardous reactions

Hazardous Polymerization: Will not occur.

### Conditions to avoid

Avoid storing in direct sunlight and avoid extremes of temperature. Heat, flames, ignition sources and incompatibles.

### Incompatible materials

Peroxide compounds.

### Hazardous decomposition products

Nitrogen, water, formaldehyde and oxides of carbon.

Hexamine could decompose to formaldehyde, which is a listed potential carcinogen. Carcinogen Category 2 - Probable human carcinogen - Safe Work Aust. Category 2.

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.

Note: Formaldehyde is known to act as sensitiser.

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

Acute Toxicity - Oral: Oral LD<sub>50</sub> (rat): >20000 mg/kg

Ingestion: 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.

Inhalation: May cause sensitisation by inhalation. May cause irritation to the respiratory tract, coughing, shortness of breath, sore throat and runny nose.

#### Skin corrosion/irritation

May cause sensitisation by skin contact. May cause irritation with symptoms of redness, swelling, itching and pain.

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### Serious eye damage/irritation

May cause irritation with symptoms of redness, swelling, itching, tearing and pain.

### Respiratory or skin sensitization

Respiratory sensitisation: Sensitization - Respiratory: Category 1

Skin Sensitisation: Sensitization - Skin: Category 1

### Germ cell mutagenicity

No data available.

### 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

No data available.

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

No data available.

### Aspiration hazard

No data available.

### Additional information

Chronic Effects: Prolonged skin contact may produce a rash to affected area(in particular the wrist, ankles, beltline, and collar area of the neck) similar in appearance to poison ivy. Hexamine may decompose to formaldehyde in the presence of perspiration (slightly acidic pH 4-6.5). The formaldehyde is trapped in the sweat pores of the skin and then oxidized to formic acid, which is believed to be the actual agent responsible for the skin rash. (WARNING: Formaldehyde may be a potential cancer hazard).

Accute Health Effects: Hexamine could decompose to formaldehyde, which is a listed potential carcinogen.

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## SECTION 12: Ecological information

### Toxicity

Acute Toxicity - Daphnia: Daphnia magna EC50: 36g/l /48hr.

### Persistence and degradability

Biodegradability this product is not readily biodegradable.

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## SECTION 13: Disposal considerations

### Disposal methods

### Product disposal

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

### 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: 1328  
Class: 4.1  
Packing Group: III  
Proper Shipping Name: HEXAMETHYLENE TETRAMINE

### **Hazchem emergency action code (EAC)**

1[Z]

### **IMDG**

UN Number: 1328  
Class: 4.1  
Packing Group: III  
EMS Number:  
Proper Shipping Name: HEXAMETHYLENE TETRAMINE

### **IATA**

UN Number: 1328  
Class: 4.1  
Packing Group: III  
Proper Shipping Name: HEXAMETHYLENE TETRAMINE

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## **SECTION 15: Regulatory information**

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

#### **Australia SUSMP**

Poison Schedule: S5

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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**

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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.

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Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019  
Safe Work Australia, Hazardous Chemical Information System (HCIS), [hcis.safeworkaustralia.gov.au](https://hcis.safeworkaustralia.gov.au)  
IATA, Dangerous Goods Regulations (DGR)  
IMO, International Maritime Dangerous Goods Code (IMDG)