

Infosafe No™ 1CHF9      Issue Date : June 2021      RE-ISSUED by CHEMSUPP

Product Name **MERCURIC NITRATE Monohydrate**

Classified as hazardous

## 1. Identification

**GHS Product Identifier**      MERCURIC NITRATE Monohydrate

**Company Name**      CHEMSUPPLY AUSTRALIA PTY LTD (ABN 19 008 264 211)

**Address**      38 - 50 Bedford Street GILLMAN  
SA 5013 Australia

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

**Emergency phone number**      CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

**E-mail Address**      www.chemsupply.com.au

**Recommended use of the chemical and restrictions on use**      Medicine, felt manufacture, mercury fulminate manufacturing, nitration of aromatic organic compounds and laboratory reagent.

<b>Other Names</b>	<u><b>Name</b></u>	<u><b>Product Code</b></u>
	Mercury (II) nitrate monohydrate,	
	Mercury pernitrate	
	MERCURIC NITRATE Monohydrate AR	MA066

### Other Information

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.

## 2. Hazard Identification

**GHS classification of the substance/mixture**      Hazardous to the Aquatic Environment - Acute Hazard: Category 1  
Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1  
Acute Toxicity - Dermal: Category 1  
Acute Toxicity - Inhalation: Category 2  
Acute Toxicity - Oral: Category 2  
Specific target organ toxicity - Repeated Exposure Category 2

**Signal Word (s)**      DANGER

**Hazard Statement (s)**      H301 Toxic if swallowed.  
H310 Fatal in contact with skin.  
H331 Toxic if inhaled.  
H373 May cause damage to organs (kidneys) through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

**Pictogram (s)**      Skull and crossbones, Health hazard, Environment



**Precautionary statement – Prevention**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P262 Do not get in eyes, on skin, or on clothing.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.

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P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary statement – Response** P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Gently wash with plenty of soap and water.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P362 Take off contaminated clothing and wash before reuse.  
P363 Wash contaminated clothing before reuse.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P314 Get medical advice/attention if you feel unwell.  
P391 Collect spillage.

**Precautionary statement – Storage** P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

**Precautionary statement – Disposal** P501 Dispose of contents/container to an approved waste disposal plant.

### 3. Composition/information on ingredients

Ingredients	Name	CAS	Proportion
	Mercuric nitrate monohydrate	7783-34-8	100 %

### 4. First-aid measures

**Inhalation** If inhaled, remove from contaminated area to fresh air immediately, avoid becoming a casualty. Make patient comfortable, keep warm and at rest until fully recovered. If breathing is difficult (or develops a bluish skin discolouration), supply oxygen by a qualified person. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.

**Ingestion** Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. Give water to drink. DO NOT INDUCE VOMITING. Seek immediate medical advice.

**Skin** If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Decontaminate clothing, shoes and leather goods before re-use, or discard. Seek urgent medical assistance.

**Eye contact** 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. Do not allow victim to rub or keep eyes closed. Seek immediate medical assistance.

**First Aid Facilities** Maintain eyewash fountain and drench facilities in work area.

**Advice to Doctor** Treat symptomatically based on judgement of doctor and individual reactions of the patient.

**Other Information** For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor at once.

### 5. Fire-fighting measures

**Suitable extinguishing media** No limitations to the type of extinguishing media. Use fire extinguishing media appropriate for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

**Hazards from Combustion Products** Mercury and nitrogen oxides, mercury vapours.

**Specific Methods** Small fire: Use dry chemical, carbon dioxide or water spray.  
Large fire: Use water spray, fog or foam. Do not use water jets. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.

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**Specific hazards arising from the chemical**      Material does not burn. Fire or heat will product irritating, toxic and/or corrosive gases. Runoff may pollute waterways.

**Hazchem Code**      2X

**Precautions in connection with Fire**      Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

## 6. Accidental release measures

**Spills & Disposal**      Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if safe to do so. Prevent entry into waterways, drains, or confined areas. Cover with plastic sheet to prevent spreading. Absorb with earth, sand or other non-combustible matierla and transfer to container. DO NOT GET WATER INSIDE CONTAINERS.  
SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

**Personal Precautions**      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.

**Personal Protection**      Wear protective clothing specified for normal operations (see Section 8)

**Clean-up Methods - Small Spillages**      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.

## 7. Handling and storage

**Precautions for Safe Handling**      Work under hood. Under no circumstances eat, drink or smoke while handling this material. Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before reuse. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Avoid generation or accumulation of dusts. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous.

**Conditions for safe storage, including any incompatibilities**      Keep containers securely sealed and protected against physical damage. Keep away from light Store in a well ventilated place away from ignition sources, oxidizing agents foodstuffs and clothing. Keep containers closed when not in use. Do not allow dust to accumulate. Keep away from heat This product should not be stored on wooden floors. Store in a cool dry place out of direct sunlight. Avoid contact with incompatible materials that support combustion such as strong oxidising agents. Containers should be bonded and grounded for transfers to avoid static sparks. Highly toxic or infectious materials should be stored in a separate safety storage cabinet or room.

**Storage Regulations**      Refer Australian Standard AS/NZS 4452:1997 'The storage and handling of toxic substances'.

**Unsuitable Materials**      Most common metals.

## 8. Exposure controls/personal protection

Occupational exposure limit values	Name	STEL		TWA		Footnote
		mg/m3	ppm	mg/m3	ppm	
	Mercuric nitrate monohydrate			0.025	0.003	Mercury, inorganic divalent compounds (as Hg)

**Other Exposure Information**      No exposure standards have been established for this product by Safe Work Australia, however, the TWA exposure standard for dusts/mists not otherwise specified is 10 mg/m3. All atmospheric contamination should be kept to as low a level as is workable.  
A time weighted average (TWA) has been established for Mercury, inorganic divalent compounds (as Hg) (Safe Work Australia) of 0.025 mg/m<sup>3</sup>, (0.003 ppm)

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	and for Mercury, elemental vapour (as Hg) (Safe Work Australia) of 0.025 mg/m <sup>3</sup> , (0.003 ppm). 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.
<b>Appropriate engineering controls</b>	Maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.
<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>	Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.
<b>Personal Protective Equipment</b>	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.
<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 impervious clothing should be worn. 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 to pale yellow crystals or powder. Deliquescent.
<b>Odour</b>	Slight nitric acid odour.
<b>Melting Point</b>	79 °C.
<b>Boiling Point</b>	Decomposes.
<b>Solubility in Water</b>	Very soluble.
<b>Solubility in Organic Solvents</b>	Soluble in acetone.
<b>Specific Gravity</b>	4.39
<b>pH</b>	pH of 10 g/L aqueous solution: 3
<b>Vapour Density (Air=1)</b>	11.0
<b>Coefficient Water/Oil Distr.</b>	logP (o/w): -0.51
<b>Flammability</b>	Not combustible but assists combustion of other substances.

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**Molecular Weight** 342.62  
**Oxidising Properties** Mild oxidising agent.  
**Other Information** Soluble in dilute acids.

## 10. Stability and reactivity

**Chemical Stability** Stable under normal temperatures and pressures. Light sensitive. May discolour on exposure to light. Deliquescent (tending to absorb atmospheric water vapor and become liquid).

**Conditions to Avoid** Moisture. Heat, direct sunlight, open flames or other sources of ignition. Light. High temperatures.

**Incompatible Materials** Reducing agents, combustible materials, most common metals, acetylene, ammonia, hypophosphoric acid, sulfur, unsaturates, aromatics, organic materials, strong bases, cyanides, thiocyanates, isothiocyanates, hypophosphites, unsaturated hydrocarbons, alcohols, nonmetals, nonmetallic hydrogen compounds and phosphine.

**Hazardous Decomposition Products** Mercury and nitrogen oxides, mercury vapours.

**Possibility of hazardous reactions** Reactive with reducing agents and organic materials.

**Hazardous Polymerization** Has not been reported.

## 11. Toxicological Information

**Toxicology Information** This substance should be treated with great care.

**Acute Toxicity - Oral** LD50 (rat): 26 mg/kg (anhydrous).

**Acute Toxicity - Dermal** LD50 (rat): 75 mg/kg (anhydrous).

**Ingestion** Fatal if swallowed. Average lethal dose for inorganic mercury salts is about 1 gram. May cause burning of the mouth and pharynx, abdominal pain, vomiting, corrosive ulceration, bloody diarrhoea. May be followed by a rapid and weak pulse, shallow breathing, paleness, exhaustion, central nervous system problems, tremors and collapse. Delayed death may occur from renal failure. Symptoms may be parallel to inhalation.

**Inhalation** Fatal if inhaled. Inhalation of the material causes irritation to the respiratory tract by damaging the mucous membranes, experiencing symptoms such as nausea, headache, shortness of breath, coughing, metallic taste, vomiting, abdominal pain. Bloody diarrhoea, intestinal burns, glottal oedema (swelling of fluid in the soft tissues of the larynx), aspiration pneumonia as well as a drop in blood pressure, cardiac dysrhythmia (irregular heart beat), circulatory collapse and renal failure.

**Skin** Fatal in contact with skin. Symptoms include redness and pain. May cause burns. Risk of skin sensitization. Can be absorbed through the skin with symptoms to parallel ingestion.

**Eye** Causes severe eye irritation. May cause eye burns. May cause eye injury. Contact with eyes causes severe lesions.

**Respiratory sensitisation** Not classified based on available information.

**Skin Sensitisation** Not classified based on available information.

**Germ cell mutagenicity** Not classified based on available information.

**Carcinogenicity** Mercury [7439-97-6] and inorganic mercury compounds are evaluated in the IARC Monographs (Vol. 58;1993) as Group 3: Not classifiable as to carcinogenicity to humans.  
 Not classified based on available information.

**Reproductive Toxicity** Not classified based on available information.

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<b>STOT-single exposure</b>	Not classified based on available information.
<b>STOT-repeated exposure</b>	Specific target organ toxicity - Repeated Exposure Category 2 (Kidney) H373 May cause damage to organs (kidney) through prolonged or repeated exposure.
<b>Chronic Effects</b>	Chronic exposure through any route can produce central nervous system damage. May cause muscle tremors, personality and behavior changes, CNS effects (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia), metallic taste, loosening of the teeth, digestive disorders, skin rashes, brain damage and kidney damage. Can cause skin allergies and accumulate in the body. Repeated skin contact can cause the skin to turn gray in colour.
<b>Mutagenicity</b>	Not classified based on available information.

## 12. Ecological information

<b>Ecotoxicity</b>	Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment. The toxicity of mercury(II) ions for water organisms depends on the water hardness.
<b>Persistence and degradability</b>	Methods for the determination of biodegradability are not applicable to inorganic substances. Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.
<b>Environmental Fate</b>	Behaviour in environmental compartments: Distribution: logP(o/w): -0.51 (anhydrous material)
<b>Bioaccumulative Potential</b>	For mercury: This material has an experimentally-determined bioconcentration factor (BCF) of greater than 100. This material is expected to significantly bioaccumulate.
<b>Acute Toxicity - Daphnia</b>	Daphnia toxicity: Daphnia magna EC50: 0.0052 mg/l /48 h (Hg(II)ions). The following applies to the water-soluble matter contained in inorganic Hg compounds in general (tested with mercury(II) chloride): Daphnia magna EC50: 0.005-3,6 mg/l (48h).

## 13. Disposal considerations

<b>Disposal Considerations</b>	Whatever cannot be saved for recovery or recycling should be disposed 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 6 (Toxic and Infectious Substances) are incompatible in a placard load with any of the following: -Class 1, Class 3, if the Class 3 dangerous goods are nitromethane, Class 8, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids; and are incompatible with food and food packaging in any quantity.
<b>U.N. Number</b>	1625
<b>UN proper shipping name</b>	MERCURIC NITRATE
<b>Transport hazard class(es)</b>	6.1
<b>Hazchem Code</b>	2X
<b>Packing Group</b>	II
<b>EPG Number</b>	6A5
<b>IERG Number</b>	34
<b>Environmental Hazards</b>	Highly toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment.

## 15. Regulatory information

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**Regulatory Information** All the constituents of this product are listed on the Australian Inventory of Chemical Substances ( AICS ), or exempted. Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

**Poisons Schedule** S7

## 16. Other Information

**Literature References** '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'.  
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand.  
Safe Work Australia, 'Hazardous Chemical Information System'.  
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'.  
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.

**Contact Person/Point** Paul McCarthy Ph. (08) 8440 2000      **DISCLAIMER STATEMENT:**  
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**Empirical Formula & Structural Formula** Hg(NO<sub>3</sub>)<sub>2</sub>.H<sub>2</sub>O

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