Infosafe No™ 1CH4E | Issue Date :June 2021 | RE-ISSUED by CHEMSUPP

Product Name **MERCUROUS NITRATE dihydrate**

Classified as hazardous

1. Identification

GHS Product Identifier MERCUROUS NITRATE dihydrate

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Recommended use of the chemical and restrictions on use Fire gilding; blackening brass; important intermediate for the other mercury derivatives; analytical reagent and laboratory reagent.

Other Names

Name	Product Code
MERCUROUS NITRATE dihydrate LR Mercury (I) nitrate dihydrate	ML051
MERCUROUS NITRATE dihydrate AR Mercury protonitrate dihydrate	MA051

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)
H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H330 Fatal 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. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection. P284 Wear respiratory protection.
Precautionary statement – Response	P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P330 Rinse mouth. P302+P352 IF ON SKIN: 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. 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	Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Ingredients	Name	CAS	Proportion
	Mercury(I) nitrate dihydrate	7782-86-7	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. DO NOT INDUCE VOMITING. Seek immediate medical advice.
Skin	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. 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. Seek immediate medical assistance.
First Aid Facilities	Maintain eyewash fountain and safety shower 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.

5. Fire-fighting measures

Hazards from Combustion Products	Mercury vapours, mercury oxides and nitrogen oxides (NOx).
Specific Methods	Small fire: USE FLOODING QUANTITIES OF WATER. Do not use dry chemicals, CO2 or foam. If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat. Large fire: Flood fire area with water from a protected position. Cool containers with flooding quantities of water until well after fire is out - If impossible, withdraw from area and let fire burn. Avoid getting water inside containers: a violent reaction may occur. Dam fire control water for later disposal.

Specific hazards arising from the chemical	Will accelerate burning when involved in a fire. May explode from heating, shock, friction or contamination. Some will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, clothing, etc). Fire may produce irritating, poisonous, and/or corrosive gases. Containers may explode when heated. Runoff may create fire or explosion hazard.
Hazchem Code	2X
Decomposition Temp.	70 °C (melting point)
Precautions in connection with Fire	Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.

6. Accidental release measures

Spills & Disposal	Do not contaminate. Keep combustibles (wood, paper, clothing, oil, etc.) away from spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use water spray to knock down vapours or divert vapour clouds. Prevent entry into waterways, drains or confined areas. Prevent exposure to heat. Dry Spill Use clean non-sparking tools to transfer material to a clean, dry plastic container and cover loosely. Move container from spill area. Small Liquid Spill Use a non-combustible material like vermiculite, sand or earth to soak up the product and place in a loosely-covered container for later disposal. Large Liquid Spill SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
Personal Precautions	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	Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Contaminated clothing should be removed and washed before reuse. Wash hands and face thoroughly after working with material. When using do not eat, drink or smoke.
Conditions for safe storage, including any incompatibilities	Store in well ventilated area. Store away from foodstuffs. Keep containers securely sealed and protected against physical damage. Keep container tightly closed in a dry, well-ventilated place away from direct sunlight.
Corrosiveness	Solution may corrode metals.
Storage Regulations	Refer Australian Standard AS/NZS 4452:1997 'The storage and handling of toxic substances'.
Storage Temperatures	Store at room temperature (15 to 25°C recommended).
Unsuitable Materials	Most common metals. Organic materials.

8. Exposure controls/personal protection

Occupational exposure limit values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote
Mercury(I) nitrate dihydrate			0.025	0.003	Mercury, inorganic divalent compounds (as Hg)

Other Exposure Information	These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of

	chemicals. They are not a measure of relative toxicity. A time weighted average (TWA) has been established for Mercury, inorganic divalent compounds (as Hg) (Safe Work Australia) of 0.025 mg/m³, (0.003 ppm) and for Mercury, elemental vapour (as Hg) (Safe Work Australia) of 0.025 mg/m³, (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.
Appropriate engineering controls	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.
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.
Eye 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.
Hand Protection	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.
Personal Protective Equipment	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.
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 impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
Hygiene Measures	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

Form	Solid
Appearance	Colourless to yellowish crystals or crystalline powder.
Odour	Odourless or slight nitric acid odour.
Decomposition Temperature	70 °C (melting point)
Melting Point	70 °C - decomposes
Solubility in Water	Soluble in small quantities of warm water (hydrolyzes in larger quantities).
Solubility in Organic Solvents	Insoluble in ammonium hydroxide.
Specific Gravity	4.78
Vapour Density (Air=1)	1.9
Flammability	Not combustible but assists combustion of other substances.

Explosion Properties	Strong oxidants may explode when shocked, or if exposed to heat, flame, or friction. Contact with red-hot carbon causes a mild explosion. Mixture with phosphorus explodes violently when struck with hammer. Also may act as initiation source for dust or vapour explosions.
Molecular Weight	561.22
Other Information	Soluble in water acidified with nitric acid.

10. Stability and reactivity

Chemical Stability	Stable under ordinary conditions of use and storage. Light sensitive. Oxidiser. May be explosive when shocked or heated. Effloresces and becomes anhydrous in dry air. Moisture sensitive.
Conditions to Avoid	Light, moisture, heat, high temperatures, sparks, flames, ignition sources, reducing agents and incompatibles.
Incompatible Materials	Red-hot carbon, phosphorus, reducing agents, easily oxidized materials, organic materials, water/moisture, acids, sulfur, ammonia, cyanides, thiocyanates, isothiocyanates, hypophosphites, most common metals, combustible materials. Solution may corrode metals.
Hazardous Decomposition Products	Mercury vapours, mercury oxides and nitrogen oxides (NOx).
Possibility of hazardous reactions	Can explode if mixed with phosphorus. Can mildly explode with carbon + heat. Extremely reactive or incompatible with reducing agents, organic materials. Highly reactive with metals, alkalies. Very slightly to slightly reactive with acids, moisture.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Ingestion	Fatal if swallowed. Average lethal dose for inorganic mercury salts is about 1 gram. May cause gastrointestinal irritation, burning of the mouth and pharynx, abdominal pain, nausea, 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. Absorption into the body may cause methemoglobinia which may lead to cyanosis. Delayed death may occur from renal failure.
Inhalation	Fatal if inhaled. Causes irritation to the respiratory tract. Symptoms include sore throat, coughing, pain, tightness in chest, breathing difficulties, shortness of breath and headache. Pneumonitis may develop. Can be absorbed through inhalation with symptoms to parallel 'Ingestion'.
Skin	Fatal in contact with skin. May be absorbed through the skin in harmful amounts. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause severe skin irritation with possible burns, especially if skin is wet or moist.
Eye	Contact with eyes may cause severe irritation, and possible eye burns.
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.
STOT-single exposure	Not classified based on available information.

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STOT-repeated exposure	Specific target organ toxicity - Repeated Exposure Category 2 (Kidney) H373 May cause damage to organs (kidney) through prolonged or repeated exposure.
Chronic Effects	Chronic exposure through any route can produce central nervous system damage. May cause muscle tremors, personality and behavior changes, memory loss, 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.
Mutagenicity	Not classified based on available information.
Human Effects	Hg compounds take their effect in cases of intoxication as cellular and protoplasma toxins. Inorganic mercury(I) compounds are - due to their poor solubility - less toxic after oral uptake than are the more soluble mercury(II) compounds. A relatively long residence time in the gastrointestinal tract may lead to oxidation to the bivalent form.

12. Ecological information

Ecotoxicity	Quantitative data on the ecological effect of this product are not available. Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment. The following applies to nitrates in general: may contribute to the eutrophication of water supplies. Hazard for drinking water. The toxicity of mercury(II) ions for water organisms depends on the water hardness.
Persistence and degradability	Methods for the determination of biodegradability are not applicable to inorganic substances. Products of Biodegradation: 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 more toxic.
Environmental Protection	Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	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.
U.N. Number	1627
UN proper shipping name	MERCUROUS NITRATE
Transport hazard class(es)	6.1
Hazchem Code	2X
Packing Group	II
EPG Number	6A5
IERG Number	34
Environmental Hazards	Highly toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment. The following applies to nitrates in general: may contribute to the eutrophication of water supplies. Hazard for drinking water.

15. Regulatory information

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: 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. ChemSupply Australia Pty Ltd 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	$Hg_2(NO_3)_2.2H_2O$

...End Of MSDS...