| Infosafe No™ | 1CH4D | Issue Date : October 2016 | RE-ISSUED by CHEMSUPP |
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Product Name : **MERCURIC OXIDE**

Classified as hazardous

## 1. Identification

**GHS Product Identifier**: MERCURIC OXIDE

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

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

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

**Recommended use of the chemical and restrictions on use**: Laboratory reagent, analytical reagent, catalyst in Kjeldahl determinations of nitrogen, anti-fouling paints, paint pigment, ceramics (pigment), perfumery, cosmetics, pharmaceuticals for topical disinfection, antiseptic, dry batteries, chemicals, polishing compound and fungicide.

**Other Names**

| Name | Product Code |
|---|---|
| MERCURIC OXIDE Yellow | MA140 |
| Mercury (II) Oxide Yellow, Yellow precipitate | |
| MERCURIC OXIDE Red LR | ML050 |
| MERCURIC OXIDE Red AR | MA050 |
| Mercury (II) oxide red, Mercury oxide red, Red precipitate | |

**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. 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 2
Acute Toxicity - Inhalation: Category 2
Acute Toxicity - Oral: Category 1
Specific Target Organ Toxicity - Repeated Exposure (Kidney) 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.

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| **Precautionary statement – Response** | P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.<br>P330 Rinse mouth.<br>P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.<br>P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.<br>P310 Immediately call a POISON CENTER or doctor/physician.<br>P361 Remove/Take off immediately all contaminated clothing.<br>P363 Wash contaminated clothing before reuse. |
| **Precautionary statement – Storage** | P403+P233 Store in a well-ventilated place. Keep container tightly closed.<br>P405 Store locked up. |
| **Other Information** | Danger of cumulative effects. |

## 3. Composition/information on ingredients

**Chemical Characterization** Solid

**Ingredients**

| Name | CAS | Proportion | Hazard Symbol | Risk Phrase |
|---|---|---|---|---|
| Mercuric oxide yellow | 21908-53-2 | 100 % | | |
| Mercuric oxide red | 21908-53-2 | 100 % | | |

## 4. First-aid measures

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| **Inhalation** | Remove victim to fresh air. Keep warm and at rest. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen. Seek urgent medical assistance. |
| **Ingestion** | Rinse mouth thoroughly with water immediately. Give plenty of water to drink. Never give anything by mouth to an unconscious person. If swallowed, do NOT induce vomiting. Seek medical attention. Urgent hospital treatment is likely to be needed. |
| **Skin** | Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek immediate medical advice. |
| **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 and supportively.<br>Antidote: The use of Dimercaprol or BAL (British Anti-Lewisite) as a chelating agent should be determined by qualified medical personnel. |
| **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

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| **Hazards from Combustion Products** | Mercury vapours, mercury oxides, oxygen, oxides of carbon. |
| **Specific Methods** | Use extinguishing media most appropriate for the surrounding fire. No limitations to the type of extinguishing media. |
| **Specific hazards arising from the chemical** | Material does not burn. Fire or heat will produce irritating, poisonous 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

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| **Personal Precautions** | Take off immediately all contaminated clothing. 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 remove to a suitable, clearly labelled container for disposal in accordance with local regulations. |
| **Clean-up Methods - Large Spillages** | Seek expert advice on handling and disposal. |

## 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. 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. Only use in well-ventilated areas. Avoid generation or accumulation of dusts. Avoid using metal tools.

**Conditions for safe storage, including any incompatabilities**
Store away from organic materials. 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 and other sources of heat or ignition. Separate from incompatibles, combustibles, or other readily oxidizable materials. This product should not be stored on wooden floors. Do not use or store on porous work surfaces (wood, unsealed concrete, etc.). Keep away from light Store in light resistant containers. Follow strict hygiene practices. Containers of this material may be hazardous when empty since they retain product residues (dusts, solids). Observe all warnings and precautions listed for the product. Store at room temperature (15 - 25 °C).

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

## 8. Exposure controls/personal protection

**Occupational exposure limit values**

| Name | STEL | | TWA | | |
|---|---|---|---|---|---|
| | mg/m3 | ppm | mg/m3 | ppm | Footnote |
| Mercuric oxide red | | | 0.025 | 0.003 | Mercury, inorganic divalent compounds (as Hg) |

**Other Exposure Information**
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**
In industrial situations 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**
Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Nitrile rubber gloves

**Personal Protective Equipment**
Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.

**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.

**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** Heavy, bright red or orange-red powder, yellow when finely powdered.

**Odour** Odourless.

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| **Melting Point** | 500 °C (decomposition) |
| **Solubility in Water** | Immiscible or insoluble (0.053 g/L at 25 °C). |
| **Solubility in Organic Solvents** | Insoluble in alcohol, ether, acetone. Soluble in most acids, organic and inorganic, but the yellow form is more reactive and dissolves more readily. |
| **Specific Gravity** | 11.1 |
| **pH** | pH 6-7 (5g/l at 20°C, slurry) |
| **Volatile Component** | 0% |
| **Explosion Properties** | Not considered to be an explosion hazard. Decomposes at melting point and can then react violently with shock, friction, or heat. |
| **Molecular Weight** | 216.59 |
| **Other Information** | Soluble in dilute hydrochloric acid and nitric acid. Soluble in solutions of alkali cyanides and iodides. Slowly soluble in solutions of alkali bromides. |

## 10. Stability and reactivity

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| **Chemical Stability** | Stable at room temperature in closed containers under normal storage and handling conditions. Light-sensitive. Decomposes on exposure to light into mercury and oxygen. At 400 °C becomes almost black but red again on cooling. |
| **Conditions to Avoid** | Incompatible materials, dust generation, excess heat, light. |
| **Incompatible Materials** | Alcohols, nitrates, halogens, semimetallic halides, hydrazine and derivatives, light metals/heat, nonmetals/heat, nonmetallic hydrogen compounds, hydrogen peroxide/nitric acid, reducing agents, ozone, strong oxidizing agents, chlorine, hypophosphorus acid, iodine + methyl and ethyl alcohol, magnesium, phospham, phosphorus, sodium + potassium, sulfur, easily oxidized materials, phosphinic acid, combustible materials, organic materials, amines, phenol, alloy, acetyl nitrate, butadiene, hydrocarbons, sulfur chloride, methanethiol. |
| **Hazardous Decomposition Products** | Mercury vapours, mercury oxides, oxygen, oxides of carbon. |
| **Possibility of hazardous reactions** | Reacts violently with chlorine, hydrazine hydrate, hydrogen peroxide, hypophosphorus acid, magnesium, phosphorus, sulfur and reducing materials. Mercury forms amalgams with many metals. |
| **Hazardous Polymerization** | Has not been reported. |

## 11. Toxicological Information

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| **Acute Toxicity - Oral** | LD50 (rat): 18 mg/kg. |
| **Acute Toxicity - Dermal** | LD50 (rat): 315 mg/kg. |
| **Ingestion** | Highly Toxic! 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** | Toxic by dust inhalation. Inhalation of the material causes irritation to the respiratory tract by damaging the mucous membranes, experiencing symptoms such as nausea, headache, and shortness of breath, coughing, metallic taste, and 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 heartbeat), circulatory collapse, and renal failure. |
| **Skin** | Causes irritation. 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. |
| **Skin Sensitisation** | Risk of skin sensitization. |
| **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. |
| **Reproductive Toxicity** | Evidence of reproductive effects. Pregnant women should not be exposed to the product. All forms of mercury can cross the placenta to the fetus, but most of what is known has been learned from experimental animals. Not a known reproductive hazard, but related mercury compounds can damage the developing fetus and decrease fertility in males and females. Death and fetotoxicity were noted in |

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| **Chronic Effects** | mice and rats respectively. Effects on fertility included post-implantation mortality orally in rats. Chronic exposure through any route can produce central nervous system damage. May cause muscle tremors, personality and behaviour 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. |
| **Serious eye damage/irritation** | Mild to severe irritation. |
| **Mutagenicity** | No evidence of mutagenic properties. |
| **Respiratory Irritation** | Mild to severe irritation. |
| **Skin corrosion/irritation** | Mild to severe irritation. |
| **Human Effects** | Mercury compounds have a cytotoxic and protoplasmatoxic effect. |

## 12. Ecological information

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| **Ecotoxicity** | 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. |
| **Bioaccumulative Potential** | High bioaccumulation potential. BCF: 1000 - 100000 (Hg(II)-ions) (Depends on pH and type of species.) |
| **Environmental Protection** | Do not allow to enter waters, waste water, or soil! |
| **Acute Toxicity - Fish** | The following applies to the water-soluble matter contained in inorganic Hg compounds in general (tested with mercury(II) chloride): Leuciscus idus LC50: 0.5 mg/l (48h). |
| **Acute Toxicity - Daphnia** | 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). |
| **Acute Toxicity - Algae** | The following applies to the water-soluble matter contained in inorganic Hg compounds in general (tested with mercury(II) chloride): Chlorella pyrenoidosa EC50: 0.3 mg/l (5h). |
| **Acute Toxicity - Bacteria** | The following applies to the water-soluble matter contained in inorganic Hg compounds in general (tested with mercury(II) chloride): Pseudomonas fluorescens IC50: 0.005 mg/l. |

## 13. Disposal considerations

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| **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

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| **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** | 1641 |
| **UN proper shipping name** | MERCURY OXIDE |
| **Transport hazard class(es)** | 6.1 |
| **Hazchem Code** | 2X |
| **Packaging Method** | 3.8.6.1 |
| **Packing Group** | II |
| **EPG Number** | 6A5 |
| **IERG Number** | 34 |

## 15. Regulatory information

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| **Regulatory Information** | Listed in the Australian Inventory of Chemical Substances (AICS). |
| **Poisons Schedule** | S7 |

## 16. Other Information

| Infosafe No™ | 1CH4D | Issue Date : October 2016 | RE-ISSUED by CHEMSUPP |
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Product Name : **MERCURIC OXIDE**

Classified as hazardous

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| **Literature References** | 'Standard for the Uniform Scheduling of Medicines and Poisons No. 6', Commonwealth of Australia, February 2015.<br>Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997.<br>National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007.<br>Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011.<br>Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010.<br>Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.<br>Safe Work Australia, 'Hazardous Substances Information System, 2005'.<br>Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.<br>Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'. |
| **Contact Person/Point** | Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT:<br>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** | HgO |

...End Of MSDS...