

**MATERIAL SAFETY DATA SHEET****MERCURIC OXIDE RED/YELLOW**

PRODUCT CODE NUMBER(S): 5240-1, 5250-1

**PRODUCT IDENTIFICATION****Chemical Name and Synonyms:** *Mercuric oxide red; Mercuric oxide yellow; Mercury (II) oxide***Chemical Family:** *Metal oxide***Chemical Formula:** *HgO***Product Use:** *Laboratory reagent***Manufacturer's Name and Address:***Caledon Laboratories Ltd.**40 Armstrong Avenue**Georgetown, Ontario L7G 4R9***Telephone No:** *(905) 877-0101***Fax No:** *(905) 877-6666***Emergency Telephone No:** *CANUTEC (613) 996-6666***HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Mercuric oxide</i>	<i>&gt;99</i>	<i>0.025 mg/m<sup>3</sup></i>	<i>21908-53-2</i>

**PHYSICAL DATA****Physical State:** *Solid***Odour and Appearance:** *Mercuric oxide red: Bright or orange-red heavy crystalline powder or scales; odourless.**Mercuric oxide yellow: Yellow or orange-yellow heavy finely divided powder; odourless.***Odour Threshold (ppm):** *Not applicable***Vapour Pressure (mm Hg):** *0.0012 mm Hg at 20°C***Vapour Density (Air = 1):** *Not applicable***Evaporation Rate (Butyl acetate=1):** *0.6***Boiling Point (degrees C):** *Not available***Melting Point (degrees C):** *500°C (decomposes)***pH:** *Not available***Specific Gravity:** *11.14***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *1641***T.D.G. Class:** *6.1***Pkg. Group:** *II***REACTIVITY DATA****Chemical Stability:** *Stable under normal conditions of use and storage. Decomposes on exposure to light.***Incompatibility with other substances:** *Acts as a powerful catalyst or oxidant under appropriate conditions. Reacts explosively with phosphorus (on impact or boiling with water), sulphur, magnesium or potassium (on heating), hydrazine hydrate, phosphonic acid, sodium-potassium alloys (on impact). May react violently or explosively with reducing agents, phenols, amines, low molecular weight**organics, chlorine, hydrogen peroxide, hypophosphorus acid, iodine plus methanol plus ethanol, acetyl nitrate, butadione, sulphur chloride, methanethiol.***Reactivity:** *Avoid exposure to light, excessive heat, incompatible materials.***Hazardous Decomposition Products:** *Mercury fumes, CO<sub>x</sub>***FIRE AND EXPLOSION DATA****Flammability:** *Non flammable, but is a strong oxidizer, and heat of reactions with reducing agents or combustible materials may cause ignition. Releases oxygen on heating which increases the flammability of combustible materials.***Extinguishing Media:** *Use an extinguisher appropriate to the surrounding material that is burning. Move containers from fire area if it can be done without risk. Use water spray or fog to cool containers and disperse vapours. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment (positive pressure full facepiece self-contained breathing apparatus) and clothing (chemical splash suit) sufficient to prevent inhalation of vapours and contact with skin and eyes.***Flash Point (Method Used):** *Not applicable***Autoignition Temperature:** *Not applicable***Upper Flammable Limit (% by volume):** *Not applicable***Lower Flammable Limit (% by volume):** *Not applicable***Hazardous Combustion Products:** *Mercury fumes, CO<sub>x</sub>***Sensitivity to Impact:** *None when pure. Mixtures may be sensitive to impact (See "Incompatibility with other substances")***Sensitivity to Static discharge:** *None identified***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD<sub>50</sub>:** *(oral, rat) 18 mg/kg; (dermal, rat) 315 mg/kg***LC<sub>50</sub>:** *Not available***Effects of Acute Exposure to Product:****Inhaled:** *Dust and vapour are very irritating and very toxic. Can cause burns and severe respiratory tract damage with sore throat, coughing, pain, tightness in chest, breathing difficulties, shortness of breath, bronchitis and pneumonitis. Readily absorbed, causing systemic mercury poisoning, with headache, muscle weakness, anorexia, gastrointestinal disturbance, rapid and weak pulse, shallow breathing, paleness, ringing in the ears, liver changes, fever, kidney damage, exhaustion and collapse. Delayed death may occur due to renal failure.***In contact with skin:** *Skin contact may cause irritation, dermatitis or sensitivity. Readily absorbed through the skin in toxic amounts, with symptoms as in "Inhaled".***In contact with eyes:** *Dust or solutions can cause irritation and even ulceration of the conjunctiva and cornea with permanent eye damage.*

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**Ingested:** *Very toxic. Average lethal dose for inorganic mercury salts ~1g. Ingestion may cause burning of the mouth and pharynx, abdominal pain, vomiting, bloody diarrhea, and systemic poisoning, with symptoms as in "Inhaled".*

**Effects of Chronic Exposure to Product:**

*Danger of cumulative and irreversible effects. Chronic exposure through any route will damage central nervous system, brain, liver, kidneys, and cause symptoms such as headache, tremors, personality and behaviour changes, loosening of teeth, loss of appetite, ulceration of skin, impaired memory, digestive disorders, skin rashes. Can cause skin sensitization. Repeated skin contact can cause skin to turn grey in colour. Persons with pre-existing nervous, kidney, or respiratory disorders, or known sensitivity to mercury may be more susceptible to the effects of this substance.*

**Carcinogenicity:** *No information available*

**Teratogenicity:** *Mercury caused adverse effects in fetuses whose mothers were exposed during pregnancy.*

**Reproductive Effects:** *Reproductive effects cited.*

**Mutagenicity:** *No specific information available, but other inorganic mercury compounds are mutagenic in bacterial and mammalian assays.*

**Synergistic Products:** *None known*

**PREVENTIVE MEASURES**

**Engineering Controls:** *Local exhaust ventilation required.*

**Respiratory Protection:** *Dust/mist mask. NIOSH/MSHA approved full facepiece respirator with dust/mist filter for up to 50x TLV or the maximum use specified by the respirator supplier, whichever is lowest. For high or unknown concentrations, as in fire or spill conditions, positive-pressure, full face-piece self-contained breathing apparatus.*

**Eye Protection:** *Chemical safety goggles and face shield if any risk of splashing or dusting is present.*

**Skin Protection:** *Impervious protective gloves and other clothing, apron, sleeves, coveralls, sufficient to prevent all contact.*

**Other Personal Protective Equipment:** *Safety shower and eye-wash fountain in work area.*

**Leak and Spill Procedure:** *Evacuate and ventilate area of spill. Cleanup personnel must be thoroughly trained in the handling of hazardous materials, and must wear protective equipment and clothing sufficient to prevent inhalation of dusts or fumes and contact with skin and eyes. Do not touch or inhale spilled material. Avoid raising dust. Mix with sand, 10 to 20 times by weight, transfer carefully into container and arrange removal by disposal company. Prevent from entering sewers, storm drains, or other waterways; dangerous if allowed to enter drinking water sources. Wash site of spillage thoroughly with water and detergent.*

**Waste Disposal:** *Follow all federal, provincial and local regulations for disposal.*

**Handling Procedures and Equipment:** *TOXIC; CUMULATIVE, POSSIBLE TERATOGEN, MUTAGEN. Workers handling this product must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Keep away from combustible or organic materials, and all sources of heat and ignition. Keep work areas free of extraneous or incompatible materials. Use the smallest amounts possible for the purpose, in designated areas with adequate ventilation. Maintain good housekeeping procedures to avoid accumulation of dust.*

*Avoid all contact and inhalation of dust or fumes. Keep containers closed when not in use and when empty. Empty containers may contain hazardous residues; treat with caution. Wash thoroughly after working with this product.*

**Storage Requirements:** *Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight. Store away from incompatible, combustible or organic materials. Storage facilities (shelves, floors) should be constructed of non-combustible and non-porous materials. Keep away from all ignition sources. Keep containers tightly closed when not in use and when empty. Protect from damage, and inspect frequently for signs of leaking.*

**FIRST AID MEASURES**

**Specific Measures:**

**Eyes:** *Flush thoroughly with gently running water for at least fifteen (15) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear protective gloves to avoid contact during first aid procedures. Get medical attention.*

**Skin:** *Remove contaminated clothing, including watches, rings, belts, and shoes. Rescuer should wear impervious gloves to avoid contact with this chemical. Wash skin with plenty of running water for at least fifteen (15) minutes. Get medical attention. Decontaminate clothing and leather goods (shoes, belts) before reuse, or discard.*

**Inhalation:** *Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty. If breathing has stopped begin artificial respiration immediately.*

**Ingestion:** *If the person is conscious, alert, and not convulsing, give large quantities (2 to 4 glasses) of water to drink immediately. After the water has been swallowed encourage vomiting (under medical supervision) by touching the back of throat with finger or by administering syrup of ipecac. Get medical attention immediately (show label if possible).*

**REFERENCES USED**

*CCINFO disc: MSDS's, May 2007*

*Budavari: The Merck Index, 12th ed., 1997*

*Royal Society of Chemistry: Chemical Safety Data Sheets, Vol. 4b, 1991*

*Suppliers' Material Safety Data Sheets*

**ADDITIONAL INFORMATION**

**Date Issued:** *June 28, 1991*

**Revision:** *May 2010*

**MSDS:** *5240-1, 5250-1*

**Proposed WHMIS Designation:** *C; D1A; D2A; D2B*

*Prepared by: Caledon Laboratories Ltd. (905) 877-0101  
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