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## Material Safety Data Sheet Mercury (II) Oxide

ACC# 13850

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Mercury (II) Oxide

**Catalog Numbers:** AC199990050, AC205730050, S80077-1, M173I 100, M173I-100, M173I100, M174I 100, M174I 50, M174I 500, M174I-100, M174I-50, M174I-500, M174I100, M174I50, M174I500, S80077-2

**Synonyms:** Mercuric oxide red, mercuric oxide yellow, mercury (II) oxide.

**Company Identification:**

Fisher Scientific  
1 Reagent Lane  
Fairlawn, NJ 07410

**For information, call:** 201-796-7100

**Emergency Number:** 201-796-7100

**For CHEMTREC assistance, call:** 800-424-9300

**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
21908-53-2	Mercury (II) oxide	>99%	244-654-7

**Hazard Symbols:** T O

**Risk Phrases:** 21 40 46 8 20 39/28 62

### Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

**Appearance:** red or yellow. **Danger!** Strong oxidizer. Contact with other material may cause a fire. May cause respiratory tract irritation. May be fatal if swallowed. Harmful if inhaled. Harmful if absorbed through the skin. May cause kidney damage. **Poison!** May cause fetal effects based upon animal studies. May cause reproductive effects based upon animal studies. May cause eye and skin irritation. Causes severe digestive tract irritation with pain, nausea, vomiting and diarrhea. May corrode the digestive tract with hemorrhaging and possible shock.

**Target Organs:** Kidneys, central nervous system.

### Potential Health Effects

**Eye:** May cause eye irritation. Contact may cause ulceration of the conjunctiva and cornea.

**Skin:** May cause mild skin irritation. May be absorbed through the skin in harmful amounts.

**Ingestion:** May cause severe and permanent damage to the digestive tract. Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

**Inhalation:** May cause respiratory tract irritation. May cause abdominal pain, nausea, vomiting, and inflammation of the gums and mouth.

**Chronic:** Overexposure may cause delayed kidney injury. Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated exposure can cause psychic abnormalities such as anxiety, depression and excitability. May cause adverse nervous system effects including muscle tremors and incoordination.

### Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid.

**Skin:** Get medical aid immediately. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** Induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:** Treat symptomatically and supportively.

**Antidote:** The use of Dimercaprol or BAL (British Anti-Lewisite) as a chelating agent should be determined by qualified medical personnel.

### Section 5 - Firefighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Oxidizer. Greatly increases the burning rate of combustible materials.

**Extinguishing Media:** For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. Use extinguishing media most appropriate for the surrounding fire.

**Autoignition Temperature:** Not available.

**Flash Point:** Not available.(estimated) Health: ; Flammability: ;

Reactivity: Explosion Limits, Lower: Not available. Upper: Not available.

### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Avoid runoff into storm sewers and ditches which lead to waterways. If sweeping is necessary, use a dust suppressant agent. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions.

### Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Minimize dust generation and accumulation.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

### Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

#### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Mercury (II) oxide	none listed	none listed	none listed

**OSHA Vacated PELs:** Mercury (II) oxide: No OSHA Vacated PELs are listed for this chemical.

#### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29CFR

1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

### Section 9 - Physical and Chemical Properties

**Physical State:** Solid  
**Appearance:** red or yellow  
**Odor:** odorless  
**pH:** Not available.  
**Vapor Pressure:** Not available.  
**Vapor Density:** Not available.  
**Evaporation Rate:**  
**Viscosity:** Not available.  
**Boiling Point:** Not available.  
**Freezing/Melting Point:** 932 deg F  
**Decomposition Temperature:** Not available.  
**Solubility:** 0.053 g/L at 25C.  
**Specific Gravity/Density:** 11.1 at 20C.  
**Molecular Formula:** HgO  
**Molecular Weight:**

### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.  
**Conditions to Avoid:** Incompatible materials, dust generation.  
**Incompatibilities with Other Materials:** Chlorine, hydrazine hydrate, hydrogen peroxide, hypophosphorus acid, iodine + methyl and ethyl alcohol, magnesium, phospham, phosphorus, sodium + potassium, sulfur, reducing agents, easily oxidized materials, phosphinic acid.  
**Hazardous Decomposition Products:** Mercury/mercury oxides, oxygen.  
**Hazardous Polymerization:** Has not been reported.

### Section 11 - Toxicological Information

**RTECS#:**  
**CAS#** 21908-53-2: OW8750000  
**LD50/LC50:**  
CAS# 21908-53-2:  
Oral, mouse: LD50 = 16 mg/kg;  
Oral, rat: LD50 = 18 mg/kg;  
Skin, rat: LD50 = 315 mg/kg;  
**Carcinogenicity:**  
CAS# 21908-53-2:  
**ACGIH:** as Hg: A4-not classifiable as a human carcinogen (listed as MERCURY).  
**IARC:** Group 3 carcinogen (listed as MERCURY, ARYL AND INORGANIC COMPOUNDS).  
**Epidemiology:** No information available.

**Teratogenicity:** Mercury vapor traverses the placenta. Specific developmental abnormalities included effects on the eyes and ears orally in rats. Other developmental abnormalities occurred orally in mice, but were not specified.

**Reproductive Effects:** Death and fetotoxicity were noted in mice and rats respectively. Effects on fertility included post-implantation mortality orally in rats.

**Neurotoxicity:** No information available.

**Mutagenicity:** No information available.

**Other Studies:** None.

### Section 12 - Ecological Information

**Ecotoxicity:** Marine fish TLm=0.29 ppm/48H

**Environmental Fate:** Mercury can be accumulated from water by many organisms (up to 10,000 fold).

**Physical/Chemical:** No information available.

**Other:** None.

### Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

**RCRA D-Series Maximum Concentration of Contaminants:** None listed.

**RCRA D-Series Chronic Toxicity Reference Levels:** None listed.

**RCRA F-Series:** None listed.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

### Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO
<b>Shipping Name:</b>	MERCURY OXIDE	MERCURY OXIDE	MERCURY OXIDE	MERCURY OXIDE MURCU OXIDE
<b>Hazard Class:</b>	6.1	6.16.1(52B)	6.16.1	
<b>UN Number:</b>	UN1641	UN1641 UN1641	UN1641 UN1641	
<b>Packing Group:</b>	II	II		III

### Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**

CAS# 21908-53-2 is listed on the TSCA inventory.

**Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

**SARA****Section 302 (RQ)**

None of the chemicals in this material have an RQ.

**Section 302 (TPQ)**

CAS# 21908-53-2: TPQ = 500/10,000 pounds; RQ = 500 pounds

**SARA Codes**

CAS # 21908-53-2: acute, chronic.

**Section 313**

This material contains Mercury (II) oxide (listed as MERCURY), 99%, (CAS# 21908-53-2) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 21908-53-2 can be found on the following state right to know lists: New Jersey, Florida, Pennsylvania, Massachusetts.

WARNING: This product contains Mercury (II) oxide, listed as 'MERCURY', a chemical known to the state of California to cause birth defects or other reproductive harm. California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations****European Labeling in Accordance with EC Directives****Hazard Symbols:**

T O

**Risk Phrases:**

R 21 Harmful in contact with skin. R 40 Possible risks of irreversible effects. R 46 May cause heritable genetic damages. R 8 Contact with combustible material may cause fire. R 20 Harmful by inhalation. R 39/28 Very toxic : danger of serious irreversible effects if swallowed. R 62 Possible risk of impaired fertility.

**Safety Phrases:**

S 22 Do not inhale dust. S 24/25 Avoid contact with skin and eyes. S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S 28B After contact with skin, wash immediately with plenty of water and soap.

**WGK (Water Danger/Protection)**

CAS# 21908-53-2: 3

**Canada**

CAS# 21908-53-2 is listed on Canada's DSL/NDSL List.

This product has a WHMIS classification of D1A, D2A.

CAS# 21908-53-2 is not listed on Canada's Ingredient Disclosure List.

**Exposure Limits**

CAS# 21908-53-2: OEL-AUSTRALIA:TWA 0.05 mg(Hg)/m3;Skin

JANUARY 1993

OEL-BELGIUM:TWA 0.05 mg(Hg)/m3;Skin JANUARY 1993

OEL-CZECHOSLOVAKI

A:TWA 0.05 mg(Hg)/m3;STEL 0.15 mg(Hg)/m3 OEL-DENMARK:TWA

0.05 mg(Hg)/

m3 JANUARY 1993 OEL-FINLAND:TWA 0.05 mg(Hg)/m3 JANUARY 1993

OEL-FR

ANCE:TWA 0.05 mg(Hg)/m3 JANUARY 1993 OEL-GERMANY:TWA 0.01

ppm (0.1 m

g(Hg)/m3) JANUARY 1993 OEL-HUNGARY:TWA 0.02 mg(Hg)/m3;STEL

0.04 mg(H

g)/m JANUARY 1993 OEL-JAPAN:TWA 0.05 mg(Hg)/m3 JANUARY 1993

OEL-THE

NETHERLANDS:TWA 0.05 mg(Hg)/m3;STEL 0.15 mg(Hg)/m3 OEL-THE

PHILIPPIN

ES:TWA 0.05 mg(Hg)/m3 JANUARY 1993 OEL-POLAND:TWA 0.01

mg(Hg)/m3 JA

NUARY 1993 OEL-RUSSIA:TWA 0.05 mg(Hg)/m3;STEL 0.01 mg(Hg)/m3

JANUARY

1993 OEL-SWEDEN:TWA 0.05 mg(Hg)/m3 JANUARY 1993

OEL-THAILAND:STEL 0

.05 mg(Hg)/m3 JANUARY 1993 OEL-UNITED KINGDOM:TWA 0.05

mg(Hg)/m3;STE

L 0.15 mg(Hg)/m3 OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check

ACGIH

TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

**Section 16 - Additional Information****MSDS Creation Date:** 12/28/1994**Revision #4 Date:** 9/02/1997

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