



MERCURY-204 OXIDE (204Hg)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 30/12/2010

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Version: 3.0

HGLM-3814

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Substance name	: MERCURY-204 OXIDE (204Hg)
EC Index-No.	: 080-002-00-6 (Unlabeled)
EC-No.	: 244-654-7 (Unlabeled)
CAS-No.	: 21908-53-2 (Unlabeled)
Product code	: HGLM-3814
Formula	: HgO
Synonyms	: Mercuric oxide / Mercuric oxide red

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 1 (Oral)	H300
Acute Tox. 1 (Dermal)	H310
Acute Tox. 1 (Inhalation)	H330
Aquatic Chronic 2	H411

Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

N; R51/53
T+; R26/27/28

Full text of R-phrases: see section 16

GHS-US classification

Acute Tox. 1 (Oral)	H300
Acute Tox. 1 (Dermal)	H310
Acute Tox. 1 (Inhalation)	H330
Aquatic Chronic 2	H411

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Liver, Kidney, Gastrointestinal tract, Nerves, Brain

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2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS06

GHS09

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H300+H310+H330 - Fatal if swallowed, in contact with skin or if inhaled
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP) :

P260 - Do not breathe dust, fume, gas, mist, spray, vapors.
P264 - Wash hands, forearms and face 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 clothing, protective gloves.
P284 - [In case of inadequate ventilation] wear Self contained breathing apparatus.
P301+P310 - IF SWALLOWED: Immediately call a doctor, a POISON CENTER.

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS06

GHS09

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H300+H310+H330 - Fatal if swallowed, in contact with skin or if inhaled
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P260 - Do not breathe dust, fume, gas, mist, spray, vapors.
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash hands, forearms and face 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 clothing, protective gloves.
P284 - [In case of inadequate ventilation] wear - Respiratory protection.
P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER
P302+P352 - If on skin: Wash with plenty of water
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P310 - Immediately call a doctor, a POISON CENTER
P320 - Specific treatment is urgent (see Hazardous component(s) for labeling on this label)
P321 - Specific treatment (see Hazardous component(s) for labeling on this label)
P322 - Specific treatment (see Hazard pictograms (CLP) on this label)
P330 - Rinse mouth.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
MERCURY-204 OXIDE (204Hg)	(CAS-No.) 21908-53-2 (Unlabeled) (EC-No.) 244-654-7 (Unlabeled) (EC Index-No.) 080-002-00-6 (Unlabeled)	100	N; R51/53 T+; R26/27/28

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
MERCURY-204 OXIDE (204Hg)	(CAS-No.) 21908-53-2 (Unlabeled) (EC-No.) 244-654-7 (Unlabeled) (EC Index-No.) 080-002-00-6 (Unlabeled)	100	Acute Tox. 1 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 Aquatic Chronic 2, H411

Full text of R- and H- phrases: see section 16

Name	Product identifier	%	GHS-US classification
MERCURY-204 OXIDE (204Hg) (Main constituent)	(CAS-No.) 21908-53-2 (Unlabeled)	100	Acute Tox. 1 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing, give artificial respiration. Get medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: Fatal if inhaled.
Symptoms/effects after skin contact	: Fatal in contact with skin.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: Fatal if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂).

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions	: Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Avoid breathing vapors, mist, gas. Avoid dust formation.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.
Methods for cleaning up	: This material and its container must be disposed of in a safe way, and as per local legislation.

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6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapor concentrations.
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Store in a well-ventilated place. Keep container tightly closed.
Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

MERCURY-204 OXIDE (204Hg) (21908-53-2 (Unlabeled))		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	Remark (ACGIH)	Central Nervous System impairment. Kidney damage. Substances for which there is a Biological Exposure Index or Indices (see BEI® section). Not classifiable as a human carcinogen. Danger of cutaneous absorption varies.
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ USA. NIOSH Recommended Exposure Limits.
USA NIOSH	NIOSH REL (ceiling) (mg/m ³)	0.1 mg/m ³ California permissible exposure limits for chemical contaminants (Title 8, Article 107).
USA NIOSH	Remark (NIOSH)	Skin - Potential for dermal absorption.
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	0.025 mg/m ³ California permissible exposure limits for chemical contaminants (Title 8, Article 107)
USA OSHA	Remark (OSHA)	Skin

8.2. Exposure controls

Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Materials for protective clothing : Wear suitable protective clothing and gloves.
Hand protection : Wear suitable protective clothing and gloves.
Eye protection : Wear eye protection. Chemical goggles or face shield with safety glasses.
Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection.
Respiratory protection : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.
Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Powder
Molecular mass : 216.59 g/mol (Labeled)
Color : Red-orange
Odor : No data available
Odor threshold : No data available
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available

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Melting point	: 500 °C (932 °F) - dec.
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Light sensitive.

10.5. Incompatible materials

Alcohols, combustible materials, sulphur, fuels, phosphine, acetylene, sulfuric acid, potassium cyanide, hydrocarbons, hydrophosphoric acid.

10.6. Hazardous decomposition products

Mercury, mercury oxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Fatal if swallowed. Dermal: Fatal in contact with skin. Inhalation: Fatal if inhaled.

MERCURY-204 OXIDE (204Hg) (21908-53-2 (Unlabeled))	
LD50 oral rat	18 mg/kg
LD50 dermal rat	315 mg/kg
ATE CLP (oral)	0.500 mg/kg body weight
ATE CLP (dermal)	5.000 mg/kg body weight
ATE CLP (gases)	10.000 ppmV/4h
ATE CLP (vapors)	0.050 mg/l/4h
ATE CLP (dust, mist)	0.005 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

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Reproductive toxicity	: Reproductive toxicity - Rat - Oral Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Overexposure may cause reproductive disorder(s) based on tests with laboratory animals. No data available Developmental Toxicity - Rat - Oral Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Eye, ear. Developmental Toxicity - Mouse - Oral Effects on Embryo or Fetus: Fetal death. Developmental Toxicity - Mouse - Oral Specific Developmental Abnormalities: Other developmental abnormalities
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Liver injury may occur. Kidney injury may occur. Nausea, Vomiting, Diarrhoea, Tremors, Salivation Stomach - Irregularities - Based on Human Evidence
Symptoms/effects after inhalation	: Fatal if inhaled.
Symptoms/effects after skin contact	: Fatal in contact with skin.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: Fatal if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No.(DOT) : 1641
DOT NA no. UN1641

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14.2. UN proper shipping name

Proper Shipping Name (DOT) : Mercury oxide
Class (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
Hazard labels (DOT) : 6.1 - Poison



Packing group (DOT) : II - Medium Danger
DOT Special Provisions (49 CFR 172.102) : IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IP2 - When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.
IP4 - Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
T3 - 2.65 178.274(d)(2) Normal..... 178.275(d)(2)
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx) : 153
DOT Packaging Non Bulk (49 CFR 173.xxx) : 212
DOT Packaging Bulk (49 CFR 173.xxx) : 242

14.3. Additional information

Emergency Response Guide (ERG) Number : 151
Other information : No supplementary information available.

Overland transport

Packing group (ADR) : II
Class (ADR) : 6.1 - Toxic substances
Hazard identification number (Kemler No.) : 60
Classification code (ADR) : T5
Hazard labels (ADR) : 6.1 - Toxic substances



Orange plates :

Tunnel restriction code (ADR) : D/E
Limited quantities (ADR) : 500g
EAC : 2X
Excepted quantities (ADR) : E4

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
MFAG-No : 151

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Air transport

DOT Quantity Limitations Passenger aircraft/rail : 25 kg
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 100 kg
CFR 175.75)

Civil Aeronautics Law : Toxic and infectious substances/Toxic substances

14.4. Environmental hazards

Dangerous for the environment :
Marine pollutant



Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

MERCURY-204 OXIDE (204Hg) (21908-53-2 (Unlabeled))

SARA Section 302 Threshold Planning Quantity (TPQ)	Subject to reporting requirements of United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313

15.2. International regulations

CANADA

MERCURY-204 OXIDE (204Hg) (21908-53-2 (Unlabeled))

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

MERCURY-204 OXIDE (204Hg)(21908-53-2 (Unlabeled))

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Yes
State or local regulations	U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right To Know List

SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-phrases:

Acute Tox. 1 (Dermal)	Acute toxicity (dermal) Category 1
Acute Tox. 1 (Inhalation)	Acute toxicity (inhalation) Category 1

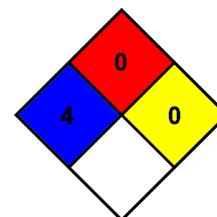
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Acute Tox. 1 (Oral)	Acute toxicity (oral) Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
H300	Fatal if swallowed
H310	Fatal in contact with skin
H330	Fatal if inhaled
H411	Toxic to aquatic life with long lasting effects
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
N	Dangerous for the environment
T+	Very toxic

- NFPA health hazard : 4 - Materials that, under emergency conditions, can be lethal.
- NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
- NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

- Health : 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures
- Flammability : 0 Minimal Hazard
- Physical : 0 Minimal Hazard

CIL Substance SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product