

## Chemical Safety Data Sheet MSDS / SDS

## Mercuric Oxide

Revision Date:2026-06-06 Revision Number:1

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

## Product identifier

Product name : Mercuric Oxide  
CBnumber : CB6384854  
CAS : 21908-53-2  
EINECS Number : 244-654-7  
Synonyms : mercury(II) oxide,Hgo

## Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P262 Do not get in eyes, on skin, or on clothing.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

## Hazard statements

H373 May cause damage to organs through prolonged or repeated exposure  
H410 Very toxic to aquatic life with long lasting effects

## SECTION 3: Composition/information on ingredients

## Substance

Product name	: Mercuric Oxide
Synonyms	: mercury(II) oxide, Hgo
CAS	: 21908-53-2
EC number	: 244-654-7
MF	: HgO
MW	: 216.59

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## SECTION 4: First aid measures

### General advice

First aiders need to protect themselves. Show this safety data sheet to the doctor in attendance.

### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

### If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

### Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

### Protection of first-aiders

For personal protection see section 8.

### Notes to physician

No data available

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## SECTION 5: Firefighting measures

### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

## Specific hazards during fire fighting

Not combustible. Ambient fire may liberate hazardous vapours.

## Hazardous combustion products

Mercury/mercury oxides.

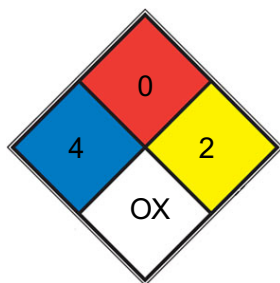
## Specific extinguishing methods

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## NFPA 704



<input checked="" type="checkbox"/>	HEALTH	4	Very short exposure could cause death or major residual injury (e.g. hydrogen cyanide, phosgene, methyl isocyanate, <a href="#">hydrofluoric acid</a> )
<input checked="" type="checkbox"/>	FIRE	0	Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)
<input checked="" type="checkbox"/>	REACT	2	Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water (e.g. white phosphorus, <a href="#">potassium</a> , <a href="#">sodium</a> )
<input type="checkbox"/>	SPEC. HAZ.	OX	

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## SECTION 7: Handling and storage

### Handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture.

### Storage

#### Further information on storage conditions

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

#### Storage class

6.1B, Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

#### Recommended storage temperature

Recommended storage temperature see product label.

#### Further information on storage stability

Light sensitive.

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## SECTION 8: Exposure controls/personal protection

### Ingredients with workplace control parameters

Biological occupational exposure limits

### Engineering measures

No data available

### Personal protective equipment

#### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### Recommended Filter type

Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Safety glasses

#### Skin and body protection

protective clothing

#### Hand protection

**Material**

Nitrile rubber

**Break through time**

480 min

**Glove thickness**

0.11 mm

**Protective index**

Full contact

**Manufacturer**

KCL 741 L

**Material**

Nitrile rubber

**Break through time**

480 min

**Glove thickness**

0.11 mm

**Protective index**

Splash contact

**Manufacturer**

KCL 741 L

**Remarks**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D- 36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

**Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9: Physical and chemical properties

**Information on basic physicochemical properties**

powder

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**Color**

Yellow to orange

**Odor**

Odorless

**Odor Threshold**

No data available

**pH**

6-7 (20°C, 50g/L in H<sub>2</sub>O, slurry)

**Melting point/ range**

500 °C

Method: dec.

**Boiling point/boiling range**

No data available

**Flash point**

Not applicable

**Evaporation rate**

No data available

**Flammability (solid, gas)**

The product is not flammable.

**Flammability (liquids)**

No data available

**Burning rate**

No data available

**Upper explosion limit / Upper flammability limit**

No data available

**Lower explosion limit / Lower flammability limit**

No data available

**Vapor pressure**

0.12 Pa ( 20 °C)

**Relative vapor density**

No data available

**Relative density**

11,14 g/cm<sup>3</sup>

**Density**

11.1 g/cm<sup>3</sup> (20 °C)

**Water solubility**

Partially soluble in water. insoluble in alcohol, ether, acetone and ammonia.

**Partition coefficient: n-octanol/water**

No data available

**Autoignition temperature**

No data available

**Decomposition temperature**

No data available

**Viscosity, dynamic**

No data available

**Viscosity, kinematic**

No data available

**Flow time**

No data available

**Explosive properties**

No data available

**Oxidizing properties**

No data available

**Molecular weight**

216.59 g/mol

**Particle characteristics Particle size**

No data available

**Solubility**

Aqueous Acid (Slightly), Methanol (Very Slightly)

**Physical state**

Powder

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**SECTION 10: Stability and reactivity****Reactivity**

No data available

**Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

**Possibility of hazardous reactions**

Risk of explosion with: nitrates Chlorine boron compounds hypophosphites various alloys Potassium magnesium sodium phosphorus Reducing agents sulfur iodine with Methanol butadiene with ethanol iodine Hydrocarbons with Chlorine hydrogen peroxide with Nitric acid Risk of ignition or formation of inflammable gases or vapours with: Alcohols nitrates halogens semimetallic halides hydrazine and derivatives Light metals

nonmetals nonmetallic hydrogen compounds hydrogen peroxide Nitric acid Reducing agents Ozone Violent reactions possible with: Alkali metals Ozone Sulphur trioxide mercaptans

### Conditions to avoid

no information available

### Incompatible materials

No data available

### Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 18 mg/kg

Remarks: (RTECS)

Oral: absorption

Acute toxicity estimate Inhalation - 4 h - 0.051 mg/l - dust/mist (Expert judgement)

Inhalation: absorption

Acute toxicity estimate Dermal - 5 mg/kg (Expert judgement)

#### Skin corrosion/irritation

Classified based on available data. For more details, see section 2

#### Serious eye damage/eye irritation

Classified based on available data. For more details, see section 2

#### Respiratory or skin sensitization

Sensitisation possible in predisposed persons.

#### Germ cell mutagenicity

Classified based on available data. For more details, see section 2

#### Carcinogenicity

Classified based on available data. For more details, see section 2

#### Reproductive toxicity

Laboratory experiments have shown teratogenic effects.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

#### Specific target organ toxicity - single exposure

Classified based on available data. For more details, see section 2

#### Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

- Kidney

#### Aspiration hazard

Classified based on available data. For more details, see section 2

### 11.2 Additional Information

RTECS: OW8750000

Liver injury may occur., Kidney injury may occur., Nausea, Vomiting, Diarrhoea,  
Tremors, Salivation

Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions. Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhoea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia). This substance should be handled with particular care.

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## SECTION 12: Ecological information

### Ecotoxicity

#### Components:

##### Mercury(II) oxide:

##### Toxicity to fish

LC50 (Cyprinus carpio (Carp)): 0.16 mg/l Exposure time: 96 h Test Type: mortality Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Mercury dichloride

##### Toxicity to daphnia and other aquatic invertebrates

NOEC (Daphnia magna (Water flea)): 0.001 mg/l Exposure time: 21 d Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Mercury dichloride

##### M-Factor (Acute aquatic toxicity)

1

##### M-Factor (Chronic aquatic toxicity)

100

### Persistence and degradability

#### Components:

##### Mercury(II) oxide:

##### Biodegradability

Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

##### Bioaccumulative potential

No data available

##### Mobility in soil

#### Components:

##### Mercury(II) oxide:

**Stability in soil**

Remarks: No data available

**Other adverse effects**

No data available

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## SECTION 13: Disposal considerations

**Disposal methods****Waste from residues**

Offer surplus and non-recyclable solutions to a licensed disposal company.

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## SECTION 14: Transport information

**International Regulations****IATA-DGR**

UN/ID No. : UN 1641

Proper shipping name : Mercury oxide

Class : 6.1

Packing group : II

Labels : Division 6.1 - Toxic substances

Packing instruction (cargo aircraft) : 676

Packing instruction (passenger aircraft) : 669

**IMDG-Code**

UN number : UN 1641

Proper shipping name : MERCURY OXIDE

Class : 6.1

Packing group : II

Labels : 6.1

EmS Code : F-A, S-A

Marine pollutant : yes

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

Not applicable for product as supplied.

**National Regulations****JT/T 617**

UN number : UN 1641

Proper shipping name : MERCURY OXIDE

Class : 6.1

Packing group : II

Labels : 6.1

Environmentally hazardous : no

### **Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## **SECTION 15: Regulatory information**

### **National regulatory information**

#### **Law on the Prevention and Control of Occupational Diseases**

#### **Regulations on Safety Management of Hazardous Chemicals**

#### **Catalogue of Hazardous Chemicals**

Listed

#### **Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)**

#### **No. / Code Chemical name / Category Threshold quantity**

**J5 Acute toxic 500 t**

#### **Hazardous Chemicals for Priority Management**

Not listed under SAWS

#### **Catalogue of Specially Controlled Hazardous**

Not listed Chemicals

#### **List of Explosive Precursors**

Not listed

#### **List of Toxic and Hazardous Air Pollutants**

Listed

#### **List of Toxic and Hazardous Soil Pollutants**

Listed

#### **Regulations on Labour Protection in Workplaces where Toxic Substances are Used**

#### **Catalogue of Highly Toxic Chemicals**

Not listed

## **Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

### **China Severely Restricted Toxic Chemicals for Import and Export**

Not listed

### **Regulation on the Administration of Precursor Chemicals**

#### **Catalogue and Classification of Precursor Chemicals**

Not listed

### **Regulations on the Administration of Controlled Chemicals**

#### **List of Controlled Chemicals**

Not listed

### **Regulations of Ozone Depleting Substances Management**

#### **List of Controlled Ozone Depleting Substances**

Not listed

#### **List of Controlled Ozone Depleting Substances Import and Export**

Not listed

### **Environmental Protection Law**

#### **List of Priority Controlled Chemicals**

Listed

#### **List of Key Controlled New Pollutants**

Not listed

### **Rotterdam Convention (Prior Informed Consent)**

Mercury(II) oxide

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## SECTION 16: Other information

### **Full text of other abbreviations**

#### **ACGIH**

USA. ACGIH Threshold Limit Values (TLV)

#### **CN BEI**

China. Biological Occupational Exposure Indices

**ACGIH / TWA AIC - Australian Invent Transport by Land of Bra bw - Body weight; CMR Standard of the German List (Canada); ECx**

**- Conc associated with x%respo Chemical Substances (Jap response; ERG - Emerge GLP - Good Laboratory P cer; IATA -**

**International Construction and Equipm Half maximal inhibitory c tion; IECSC - Inventory o tional Maritime Dangerou Industrial**

**Safety and H Standardisation; KECI - K tration to 50 % of a test (Median Lethal Dose); MA lution from Ships; MERC of Dangerous Goods; n.o. - No Observed (Adverse) fect Level; NOELR - No Norm; NTP - National Toxi icals; OECD - Organisatio fice of Chemical Safety a and Toxic substance; PIC stances; (Q)SAR - (Quant (EC) No 1907/2006 of th Registration, Evaluation, Accelerating Decompositi Chemical Substance Inve Thailand Existing Chemica States); UN - United Nat Transport of Dangerous WHMIS - Workplace Hazar**

8-hour, time-weighted average ry of Industrial Chemicals

ANTT - National Agency for il

ASTM - American Society for the Testing of Materials

- Carcinogen, Mutagen or Reproductive Toxicant

DIN nstitute for Standardisation

DSL - Domestic Substances ntration associated with x% response

ELx - Loading rate se

EmS - Emergency Schedule

ENCS - Existing and New n)

ErCx - Concentration associated with x% growth rate cy Response Guide

GHS - Globally Harmonised System

actice

IARC - International Agency for Research on Canir Transport Association

IBC - International Code for the nt of Ships carrying Dangerous Chemicals in Bulk

IC50 ncentration

ICAO - International Civil Aviation Organiza- Existing Chemical Substances in China

IMDG - Interna- Goods

IMO - International Maritime Organisation

ISHL alth Law (Japan)

ISO - International Organisation for rea Existing Chemicals Inventory

LC50 - Lethal Concenopulation

LD50 - Lethal Dose to 50% of a test population POL - International Convention for the Prevention of PoI- SUR - The Agreement for the Facilitation of the Transport . - Not Otherwise Specified

Nch - Chilean Norm

NO(A)EC ffect Concentration

NO(A)EL - No Observed (Adverse) Efbserveable Effect Loading Rate

NOM - Official Mexican ology Program

NZIoC - New Zealand Inventory of Chemfor Economic Co-operation and Development

OPPTS - Ofd Pollution Prevention

PBT - Persistent, Bioaccumulative S - Philippines Inventory of Chemicals and Chemical Subtative) Structure Activity Relationship

REACH - Regulation European Parliament and of the Council concerning the uthorisation and Restriction of Chemicals

SADT - Selfn Temperature

SDS - Safety Data Sheet

TCSI - Taiwan tory

TDG - Transportation of Dangerous Goods

TECI s Inventory

TSCA - Toxic Substances Control Act (United ons)

UNRTDG - United Nations Recommendations on the oods

vPvB - Very Persistent and Very Bioaccumulative

ous Materials Information System

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.