

## Chemical Safety Data Sheet MSDS / SDS

## lead oxide

Revision Date:2025-02-01 Revision Number:1

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

**Product identifier**

Product name : lead oxide  
CBnumber : CB0107200  
CAS : 1314-41-6  
EINECS Number : 215-235-6  
Synonyms : lead oxide,RED LEAD

**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 : 400-158-6606

## SECTION 2: Hazards identification

**Classification of the substance or mixture**

Acute toxicity - Category 4, Oral  
Acute toxicity - Category 4, Inhalation  
Carcinogenicity, Category 2  
Reproductive toxicity, Category 1A  
Reproductive toxicity, Additional category for effects on or via lactation  
Specific target organ toxicity – repeated exposure, Category 1  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

**Label elements****Pictogram(s)**

□□□□

Signal word : Danger

**Hazard statement(s)**

H272 May intensify fire; oxidizer

H302 Harmful if swallowed

H332 Harmful if inhaled

H351 Suspected of causing cancer

H360 May damage fertility or the unborn child

H372 Causes damage to organs through prolonged or repeated exposure

H373 May cause damage to organs through prolonged or repeated exposure

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

#### **Precautionary statement(s)**

P201 Obtain special instructions before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P220 Keep/Store away from clothing/.../combustible materials.

P221 Take any precaution to avoid mixing with combustibles/...

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P370+P378 In case of fire: Use ... for extinction.

P405 Store locked up.

#### **Prevention**

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P203 Obtain, read and follow all safety instructions before use.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P263 Avoid contact during pregnancy and while nursing.

P273 Avoid release to the environment.

#### **Response**

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P317 Get medical help.

P318 IF exposed or concerned, get medical advice.

P319 Get medical help if you feel unwell.

P391 Collect spillage.

#### **Storage**

P405 Store locked up.

#### **Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

#### **Other hazards**

no data available

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: lead oxide
Synonyms	: lead oxide,RED LEAD
CAS	: 1314-41-6
EC number	: 215-235-6
MF	: O4Pb3
MW	: 685.6

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## SECTION 4: First aid measures

### Description of first aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .

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

no data available

### Indication of any immediate medical attention and special treatment needed

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Lead and related compounds

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## SECTION 5: Firefighting measures

### Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

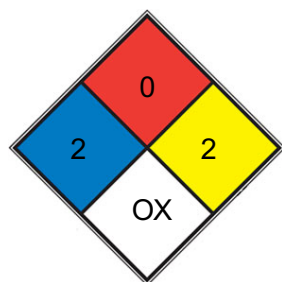
### Specific Hazards Arising from the Chemical

Gives off irritating or toxic fumes (or gases) in a fire. Many reactions may cause fire or explosion.

## Advice for firefighters

In case of fire in the surroundings, use appropriate extinguishing media.

## NFPA 704



■ HEALTH	2	Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. <a href="#">diethyl ether</a> , ammonium phosphate, iodine)
■ 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)
■ 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> )
□ SPEC. HAZ.	OX	

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

### Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

### Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wetbrushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

## SECTION 7: Handling and storage

### Precautions for safe handling

NO contact with reducing agents. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### Conditions for safe storage, including any incompatibilities

Separated from food and feedstuffs and strong reducing agents. See Chemical Dangers. Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place. Storage class (TRGS 510): Oxidizing hazardous materials.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

TLV: 0.05 mg/m<sup>3</sup>, as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans). MAK: carcinogen category: 2; germ cell mutagen group: 3A. EU-OEL: (binding): 0.15 mg/m<sup>3</sup> as TWA

#### Biological limit values

no data available

### Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### Individual protection measures

#### Eye/face protection

Wear safety spectacles.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use local exhaust or breathing protection.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	red powder
Colour	Orange
Odour	no data available
Melting point/freezing point	> 550 °C. Atm. press.: Ca. 1 013 mBar. Remarks: The test item has no melting point at atmospheric pressure up to the final temperature of 550 °C.
Boiling point or initial boiling point and	> 550 °C. Atm. press.: Ca. 1 013 mBar. Remarks: The test item has no boiling point at atmospheric

boiling range	pressure up to the final temperature of 550°C.
Flammability	Gives off irritating or toxic fumes (or gases) in a fire. Many reactions may cause fire or explosion.
Lower and upper explosion limit/flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	500°C
pH	no data available
Kinematic viscosity	no data available
Solubility	Insoluble in water
Partition coefficient n-octanol/water	no data available
Vapour pressure	10 mm Hg ( 0 °C)
Density and/or relative density	8.93. Temperature:23.8 °C.
Relative vapour density	no data available
Particle characteristics	no data available

## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating. This produces oxygen and toxic fumes. Reacts violently with reducing agents. This generates fire hazard.

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No data. Decomposes on heating. This produces oxygen and toxic fumes. Reacts violently with reducing agents. This generates fire hazard.

### Conditions to avoid

no data available

### Incompatible materials

Incompatible materials: Strong reducing agents

### Hazardous decomposition products

Decomposes between 500 and 530 deg C.

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - rat (male/female) - > 2 000 mg/kg bw.
- Inhalation: LC50 - rat (male/female) - > 5.05 mg/L air.
- Dermal: no data available

### **Skin corrosion/irritation**

no data available

### **Serious eye damage/irritation**

no data available

### **Respiratory or skin sensitization**

no data available

### **Germ cell mutagenicity**

no data available

### **Carcinogenicity**

There is limited evidence in humans for the carcinogenicity of inorganic lead compounds. ... There is sufficient evidence in experimental animals for the carcinogenicity of inorganic lead compounds. There is sufficient evidence in experimental animals for the carcinogenicity of lead acetate, lead subacetate, lead chromate, and lead phosphate. There is inadequate evidence in experimental animals for the carcinogenicity of lead oxide and lead arsenate. ... There is inadequate evidence in experimental animals for the carcinogenicity of lead powder. Overall evaluation Inorganic lead compounds are probably carcinogenic to humans (Group 2A). Inorganic lead compounds

### **Reproductive toxicity**

no data available

### **STOT-single exposure**

no data available

### **STOT-repeated exposure**

The substance may have effects on the blood, bone marrow, central nervous system, peripheral nervous system and kidneys. This may result in anaemia, encephalopathy (for example, convulsions), peripheral nerve disease, abdominal cramps and kidney impairment. Causes toxicity to human reproduction or development.

### **Aspiration hazard**

A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

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## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 1 170 µg/L - 96 h. Remarks:(estimated using the conversion equation according to Blust (2010); measured total LC50 values was 1170 µg/L).

Toxicity to daphnia and other aquatic invertebrates: NOEC - other aquatic mollusc: *Crassostrea gigas* -  $\geq$  1 915 µg/L - 48 h. Remarks:Pb.

Toxicity to algae: NOEC - *Skeletonema costatum* - 22.7 µg/L - 96 h.

Toxicity to microorganisms: IC10 - Micro-organisms living in activated sludge mixed liquor - 2.92 mg/L - 1 h. Remarks:Respiration rate.

### **Persistence and degradability**

no data available

### **Bioaccumulative potential**

no data available

### **Mobility in soil**

no data available

### **Other adverse effects**

no data available

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## SECTION 13: Disposal considerations

### **Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## SECTION 14: Transport information

### **UN Number**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **UN Proper Shipping Name**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **Transport hazard class(es)**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **Packing group, if applicable**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)



## Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

## Special precautions for user

no data available

## Transport in bulk according to IMO instruments

no data available

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# SECTION 15: Regulatory information

## Safety, health and environmental regulations specific for the product in question

### European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

### EC Inventory

Listed.

### United States Toxic Substances Control Act (TSCA) Inventory

Listed.

### China Catalog of Hazardous chemicals 2015

Listed.

### New Zealand Inventory of Chemicals (NZIoC)

Listed.

### PICCS

Listed.

### Vietnam National Chemical Inventory

Listed.

### IECSC

Listed.

### Korea Existing Chemicals List (KECL)

Listed.

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# SECTION 16: Other information

## Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

## References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

## Other Information

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home.

### 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.