



Material safety data sheet

1. Product and company identification

Product name : Lead(IV) oxide
Name of manufacturer : Junsei Chemical Co., Ltd.
Address : 4-16, 4-Chome, Nihonbashi-Honcho, Chuo-ku Tokyo, 103-0023, JAPAN
Name of section : Quality Assurance Department
Telephone number : +81-48-986-6161
Facsimile number : +81-48-989-2787
Mail address : shiyaku-t@junsei.co.jp

2. Summary of danger and Hazard

GHS classification

Physical and chemical hazard

Flammable solids : Out of category
Pyrophoric solids : Out of category
Self-heating substances and mixtures : Out of category
Substances and mixtures which, in contact with water, emit flammable gases : Out of category
Oxidizing solids : Category 3

Human health hazard

Skin corrosion • Irritation : Category 2
Serious eye damage • Eye irritation : Category 2A
Carcinogenicity : Category 2
Reproductive toxicity : Category 1A
Specific target organ systemic toxicity(single exposure) : Category 1
Specific target organ systemic toxicity(repeated exposure) : Category 1

Pictogram or symbol



Signal word : Danger
Hazard statement : May intensify fire : oxidizer
Causes skin irritation
Causes serious eye irritation
Suspected of causing cancer

May damage fertility or the unborn child
Causes damage to organs (blood, kidneys, nervous system)
Causes damage to organs (blood, kidneys, nervous system) through prolonged or repeated exposure

Cautions

- Safety measurements** : Do not handle until all safety precautions have been read and understood.
Keep away from heat.
Keep away from combustible substances.
Do not breathe dust, mist, and vapor.
Do not eat, drink or smoke when using this product.
Wear appropriate protective gloves, glasses, clothing, face shield, or mask.
Wash protective equipment thoroughly after use.
Wash hands thoroughly after handling.
- First-aid measures** : If in eyes : Rinse cautiously with water for several minutes. Get medical treatment.
If on skin : Remove contaminated clothing and the substance. If skin irritation occurs, get medical treatment.
Wash hands thoroughly after handling.
If exposed, get medical treatment.
Get medical treatment, if you feel unwell.
- Storage** : Keep away from combustible substances.
Store locked up.
- Disposal** : Dispose of contents and containers appropriately in accordance with related regulations.

3. Composition/Information on ingredients

- Substance/Mixture** : Substance
Chemical name or commercial name : Lead(IV) oxide
Synonyms : Lead dioxide, Lead oxide, brown, Lead peroxide
Ingredients and composition : Lead(IV) oxide min. 95.0%
Chemical formula : PbO₂
CAS No. : 1309-60-0
TSCA Inventory : Registered
EINECS No. : 2151745
Dangerous and hazardous ingredients : Lead(IV) oxide

4. First aid measures

- Inhalation** : Remove the victim to fresh air, and make him blow his nose and gargle.
- Skin contact** : Wash the affected areas under running water.

Eye contact : Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.

Ingestion : Give the victim water or salt water and make him vomit. Get medical attention.

5. Fire fighting measures

Extinguishing media : This product is noncombustible.

Prohibited extinguishing media

: None

Particular fire fighting : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Protection for firefighters

: Firefighters should wear protective equipment.

6. Accidental release measures

Cautions for personnel : Wear proper equipment and avoid contact with skin and inhalation of dust. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Cautions for environment : Attention should be given not to cause damage to the environment by flowing of spillage to rivers. In case of the dilution of copious water, do not cause damage to the environment by untreated wastewater.

Removal measure : Sweep up in a chemical waste container and spray calcium hydroxide or sodium carbonate water solution to dispose. Flush residual area with copious amounts of water.

7. Cautions of handling and storage

Handling

Engineering measures : If necessary, wear proper protective equipment not to contact with skin or inhale the dust.

Storage

Adequate storage condition

: Store in a dark, cool place and tightly closed.

Safety adequate container materials

: Glass, polyethylene, polypropylene

8. Exposure control/Personal protection

Engineering measures : Use only with adequate ventilation and in closed systems.

Control parameters

ACGIH(2009) : 0.05mg/m³(as Inorganic lead compounds) (TLV-TWA)

Protective equipment

Respiration protective equipment

: Dust mask

Hands protective equipment

: Impervious protective gloves

Eyes protective equipment

: Safety goggles

Skin and body protective equipment

: Protective clothing, protective boots

9. Physical and chemical properties

Appearance : Powder
Color : Dark brown-black
Odor : Odorless
Boiling point : Decomposition
Melting point : Decomposition (290°C)
Flash point : Noncombustible
Specific gravity : 9.38g/ml
Solubility
Solubility in solvents : Water : Insoluble
Other data : Soluble in hydrochloric acid

10. Stability and reactivity

Stability : Stable under normal usage.
Reactivity : May react with reducing substances.
Incompatible conditions : Light, heat
Incompatible materials : Reducing substances
Hazardous decomposition products
: Thermal decomposition generates lead(II) oxide fume or gas.

11. Toxicological information

Acute toxicity : Oral : Not possible to classify because of insufficient data.
Dermal : Not possible to classify because of insufficient data.
Inhalation(vapor) : Not possible to classify because of insufficient data.
Inhalation(dust, mist) : Not possible to classify because of insufficient data.
pig intraperitoneal LD50=220mg/kg
Skin corrosiveness : Causes skin irritation(category 2)
This substance has severe irritation of skin.
Irritation to skin, eyes : Causes serious eye irritation(category 2A)
This substance has severe irritation of eye.
Respiratory sensitization or Skin sensitization
: Respiratory sensitization : Not possible to classify because of insufficient data.
Skin sensitization : Not possible to classify because of insufficient data.
Mutagenicity : Not possible to classify because of insufficient data.
Carcinogenic effects : Suspected of causing cancer(category 2)
Japan Society for Occupational Health classifies Inorganic lead compounds as the group 2B. (The chemical is probably carcinogenic to humans.)
Effects on the reproductive system
: May damage fertility or the unborn child(category 1A)

Lead has been known to possess developmental neurotoxic and reproductive toxic potentials in humans.

Specific target organ systemic toxicity single exposure

: Cause damage to organs (blood system, kidneys, nervous system) (category 1)

Based on the human evidence: The effects observed in acute and chronic studies are very similar for inorganic lead compounds. Inhalation or oral ingestion of inorganic lead has been reported to induce oral contraction and thirst, along with nausea, vomiting, upper abdominal discomfort, loss of appetite, abdominal pain and constipation suggesting gastrointestinal toxicity.

The effects on hematopoietic function such as hemoglobin synthesis inhibition due to δ -aminolevulinic acid/heme synthetic enzyme inhibition and anemia caused by shortened survival of red blood cells are considered representative of toxic actions of lead. Kidney effects are evidenced by interstitial nephropathy and decreased urinary output along with proximal renal tubular damage showing Fanconi's syndrome represented by proteinuria, hematuria, urinary cast, glycosuria and aminoaciduria.

Specific target organ systemic toxicity repeated exposure

: Cause damage to organs (blood system, kidneys, nervous system) through prolonged or repeated exposure (category 1)

The effects on hematopoietic function such as hemoglobin synthesis inhibition due to δ -aminolevulinic acid/heme synthetic enzyme inhibition and anemia caused by shortened survival of red blood cells are considered representative of toxic actions of lead. Kidney effects are evidenced by interstitial nephropathy and decreased urinary output along with proximal renal tubular damage showing Fanconi's syndrome represented by proteinuria, hematuria, urinary cast, glycosuria and aminoaciduria.

Aspiration hazard

: Not possible to classify because of insufficient data.

12. Ecological information

Ecotoxicity

Fish toxicity

: Acute aquatic toxicity : Not possible to classify because of insufficient data.

Chronic aquatic toxicity : Not possible to classify because of insufficient data.

Rediualbility and degradability

: Not available

Ecorediualbility

: Not available

13. Disposal consideration

Residual disposal

: Disposal should be made by one of following methods.

Harden with cement and bury in a landfill site approved for hazardous waste disposal after confirming dissolving quantity in under criteria. Or entrust approved waste disposal companies with the disposal.

Roasting method

: In case of a large amount of the chemical, recover metal lead by roast reduction method.

<Note>

: The disposal of roasting method is desirable to entrust disposal companies.

Add the chemical gradually in alkaline water solution like calcium hydroxide, sodium carbonate to neutralize and flush in a drain with a large amount of water.

Containers : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

UN class : Class 5.1(Oxidizing substances) P. G. III

UN number : 1872

Marine regulation information

UN No. : 1872

Proper shipping name : LEAD DIOXIDE

Class : 5.1

Sub risk : -

Packing group : III

Marine pollutant : Not applicable

Aviation regulation information

UN No. : 1872

Proper shipping name : Lead dioxide

Class : 5.1

Sub risk : -

Packing group : III

15. Regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

References

Encyclopaedia Chemica, Kyoritsu Shuppan Co., Ltd. (1963)

Handbook of dangerous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001)

Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984)

Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa (2000)

The information contained herein is based on several references and the present state of our knowledge. However the MSDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product.