

Safety Data Sheet **LEAD (II,IV) OXIDE**

SDS no. CREA6K9J • Version 1.0 • Date of issue: 2023-07-04

SECTION 1: Identification

GHS Product identifier

Product name LEAD (II,IV) OXIDE

Recommended use of the chemical and restrictions on use

Storage batteries, glass, pottery and enameling, varnish, purification of alcohol, packing pipe joints, metal protective paints, fluxes, ceramic glazes and laboratory reagent.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Dangerous Goods of Class 6 (Toxic and Infectious Substances) are incompatible in a placard load with any of the following: Class 1, Class 3, if the Class 3 dangerous goods are nitromethane, Class 8, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids; and are incompatible with food and food packaging in any quantity.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1
- Carcinogenicity, Cat. 2
- Germ cell mutagenicity, Cat. 2
- Oxidizing solids, Cat. 2
- Toxic to reproduction, Cat. 1
- Specific target organ toxicity following repeated exposure, Cat. 2

Safety Data Sheet

LEAD (II,IV) OXIDE

SDS no. CREA6K9J • Version 1.0 • Date of issue: 2023-07-04

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H272	May intensify fire; oxidizer
H341	Suspected of causing genetic defects
H351	Suspected of causing cancer
H360	May damage fertility or the unborn child
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)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P273	Avoid release to the environment.
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 agents recommended in Section 5 of SDS for extinction
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 685.57

Components

Component	CAS no.	Concentration
Lead (II,IV) oxide (EC no.: 215-235-6)	1314-41-6	100 % (weight)
CLASSIFICATIONS: Carcinogenicity, Cat. 2; Germ cell mutagenicity, Cat. 2; Specific target organ toxicity following repeated exposure, Cat. 2; Toxic to reproduction, Cat. 1. HAZARDS: H341 - Suspected of causing genetic defects [route]; H351 - Suspected of causing cancer [route]; H360 - May damage fertility or the unborn child [effect, route]; H373 - May cause damage to organs [organs] through prolonged or repeated exposure [route].		

SECTION 4: First-aid measures

Description of necessary first-aid measures

If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.
In case of skin contact	Immediately remove contaminated clothing and wash affected area with water for at

least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek immediate medical advice /attention depending on the severity.

In case of eye contact

Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.

If swallowed

Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

Most important symptoms/effects, acute and delayed

The following applies to lead compounds in general: Due to the poor absorbability via the gastrointestinal tract, only very high doses lead to acute cases of intoxication. After a latency period of several hours: metallic taste, nausea, vomiting and colics occur, in many instances followed by shock. Lead salts have been reported to cross the placenta and to induce embryo- and feto-mortality. Adverse effects of lead on human reproduction, embryonic and fetal development, and postnatal (e.g., mental) development have been reported.

Indication of immediate medical attention and special treatment needed, if necessary

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Small fire: USE FLOODING QUANTITIES OF WATER.

Do not use dry chemicals, CO₂ or foam.

If safe to do so, move undamaged containers from fire area.

Do not move cargo if cargo has been exposed to heat.

Large fire: Flood fire area with water from a protected position.

Cool containers with flooding quantities of water until well after fire is out - If impossible, withdraw from area and let fire burn. Avoid getting water inside containers: a violent reaction may occur. Dam fire control water for later disposal.

Specific hazards arising from the chemical

May produce irritating, poisonous and/or corrosive gases such as lead/lead oxides.

Oxidizer: Contact with combustible/organic material may cause fire. Fire or heat will produce irritating, poisonous and/or corrosive gases. Runoff may pollute waterways.

Special protective actions for fire-fighters

Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms. Remove ignition sources Evacuate the area of all non-essential personnel.

Environmental precautions

Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Methods and materials for containment and cleaning up

Keep combustibles away from spilled material. Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid substance contact and generation and inhalation of dust. Avoid contact with eyes, skin and clothing. Under no circumstances eat, drink or smoke while handling this material. Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before reuse. It is recommended that pregnant or breastfeeding women should not handle this product unless adequate exposure protection can be assured at all times. Female personnel planning pregnancy should be made aware of the potential risks.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and other sources of heat or ignition. Store away from combustible materials.

Store at room temperature (15 - 25 °C recommended).

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state

Solid

Appearance

Reddish to yellowish powder.

Safety Data Sheet LEAD (II,IV) OXIDE

SDS no. CREA6K9J • Version 1.0 • Date of issue: 2023-07-04

Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Insoluble. Solubility in Organic Solvents: Insoluble in alcohol.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 9-9.6
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Soluble in excess glacial acetic acid, in hot HCl with evolution of Cl and in dilute HNO₃, in presence of H₂O₂. Partly soluble in acids.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Chemical stability

Stable under ordinary conditions of use and storage.

Possibility of hazardous reactions

Hazardous Polymerization: Will not occur.

Conditions to avoid

Heat, flames, ignition sources and incompatibles.

Incompatible materials

Strong reducing agents, strong oxidizing agents, aluminium, alkali metals, metals (in powder form), carbides, boron, fluorine/glycerol, hydrides, halogen/alkenes, hydrogen peroxides, performic acid, perchloric acid/glycerol, silanes, sodium, sulfite, sulfur oxides.

Hazardous decomposition products

May produce irritating, poisonous and/or corrosive gases such as lead/lead oxides.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Ingestion: Harmful if swallowed. Acute lead poisoning can lead to muscle weakness, loss of appetite, dizziness, metallic taste, abdominal pain, nausea, vomiting, headaches.

Inhalation: Harmful by inhalation. Lead can be absorbed through the respiratory system causing irritation to bronchia and lungs. Symptoms include metallic taste, nausea, vomiting, chest and abdominal pain and increased lead blood levels may follow.

Skin corrosion/irritation

In general, lead compounds are not considered irritating to skin (REACH). No effects were reported in skin irritation assays in rabbits citing OECD TG 404 for lead dioxide (CAS No: 1309-60-0), lead oxide, red (CAS No: 1314-41-6) and lead monoxide (CAS No: 1317-36-8). Repeated or prolonged exposure may cause lead compounds to be absorbed through the skin with symptoms similar to ingestion exposure.

Serious eye damage/irritation

In general, lead compounds were not reported to be irritating to eyes or having caused serious eye damage (REACH). No effects were reported in eye irritation assays in rabbits citing OECD TG 405 for lead dioxide (CAS No: 1309-60-0), lead oxide, red (CAS No: 1314-41-6) and lead monoxide (CAS No: 1317-36-8).

Respiratory or skin sensitization

Skin Sensitisation: Several lead compounds, including lead dioxide (CAS No: 1309-60-0), lead oxide, red (CAS No: 1314-41-6) and lead monoxide (CAS No: 1317-36-8) were reported to be non-sensitisers (REACH). It was reported that the compounds gave negative results for skin sensitisation in guinea pigs when tested according to OECD TG 406.

Germ cell mutagenicity

Suspected of causing genetic defects

Carcinogenicity

Lead compounds is evaluated in the IARC Monographs (Vol. 87; in preparation) as Group 2A: Probably carcinogenic to humans.

Reproductive toxicity

Toxic to Reproduction-Developmental Category 1, Toxic - May cause harm to the unborn child - Safe Work Aust.

Toxic to Reproduction-Fertility Category 3, Harmful - Possible risk of impaired fertility - Safe Work Aust.

Animal experiments suggest that the substance may lead to an impairment of reproductive performance in men.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

May cause damage to organs through prolonged or repeated exposure

Aspiration hazard

No data available.

Additional information

Chronic Effects: Many lead compounds have been identified as causing toxic effects in the blood-forming organs, kidneys, central nervous system and reproductive system. Chronic uptake and excessive exposure causes peripheral muscular weakness (<qt>drop-wrist</qt>), anaemia, and central-nervous and digestive system disorders. The synthesis of hemoglobin is inhibited and results in anaemia. If left untreated, neuromuscular dysfunction, possible paralysis, and encephalopathy can result. Additional symptoms of overexposure include: joint and muscle pain, weakness of the extensor muscle (frequently abdominal pain, diarrhea, constipation, nausea, vomiting, blue line on

Safety Data Sheet

LEAD (II,IV) OXIDE

SDS no. CREA6K9J • Version 1.0 • Date of issue: 2023-07-04

the gums, insomnia, and metallic taste. Women of child-bearing age should not be exposed to the substance over longer periods of time (observe critical threshold) as many lead compounds have an embryotoxic effect. Danger of cumulative effects.

Other Information: NICNAS Lead oxides: Human health tier II assessment.

Lead (II,IV) oxide: guinea pig LD50 intraperitoneal 220mg/kg (220mg/kg) "Merck Index; an Encyclopedia of Chemicals, Drugs, and Biologicals", 11th ed., Rahway, NJ 07065, Merck & Co., Inc. 1989Vol. 11, Pg. 854, 1989.

guinea pig LDLo oral 1gm/kg (1000mg/kg) BEHAVIORAL: CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD

BLOOD: PIGMENTED OR NUCLEATED RED BLOOD CELLS Archiv fuer Hygiene und Bakteriologie. Vol. 125, Pg. 273, 1941.

mouse LD50 intraperitoneal 17700mg/kg (17700mg/kg) Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. Vol. 26(8), Pg. 51, 1982.

rat LD50 intraperitoneal 630mg/kg (630mg/kg) Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. Vol. 19(3), Pg. 30, 1975.

SECTION 12: Ecological information

Toxicity

Ecotoxicity: The following applies to lead compounds in general : biological effects: toxic for aquatic organisms (calc. as free lead); lethal for fish as from: 1.4 mg/l.

Persistence and degradability

Insoluble in water.

Mobility in soil

Not likely to be mobile due to its low solubility.

Other adverse effects

Do not allow product to enter drains, waterways or sewers. Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic organisms.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not allow product to enter drains, waterways or sewers. Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic organisms.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 1479

Class: 5.1

Packing Group: III

Proper Shipping Name: OXIDIZING SOLID, N.O.S. (CONTAINS LEAD(II,IV) OXIDE)

Hazchem emergency action code (EAC)

Safety Data Sheet

LEAD (II,IV) OXIDE

SDS no. CREA6K9J • Version 1.0 • Date of issue: 2023-07-04

1Y

IMDG

UN Number: 1479

Class: 5.1

Packing Group: III

EMS Number:

Proper Shipping Name: OXIDIZING SOLID, N.O.S.(CONTAINS LEAD(II,IV) OXIDE)

IATA

UN Number: 1479

Class: 5.1

Packing Group: III

Proper Shipping Name: OXIDIZING SOLID, N.O.S.(CONTAINS LEAD(II,IV) OXIDE)

SECTION 15: Regulatory information

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

Australia SUSMP

Poison Schedule: S6

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. ChemSupply Australia Pty Ltd accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)