# SAFETY DATA SHEET

**Classified as hazardous in accordance with the criteria of EPA New Zealand**

## Section 1 - Identification

**Product Identifier**

| | |
|---|---|
| **Product Name** | **Lead(II) oxide** |
| **CAS No** | 1317-36-8 |
| **Synonyms** | C.I. 77577; Lead monooxide, Lead protoxide, Litharge; Lead(II) oxide |
| **Molecular Formula** | O Pb |
| **Molecular Weight** | 223.19 |
| **Recommended Use** | Laboratory chemicals. |
| **Uses advised against** | No Information available |

| | |
|---|---|
| **Product Code** | **44343** |
| **Address** | Thermo Fisher Scientific New Zealand Ltd<br>244 Bush Road, Albany,<br>Auckland, New Zealand |
| **Emergency Tel.** | **CHEMTREC®**<br>**09 980 6780 or +64 9 980 6780** |
| **Telephone / Fax Numbers** | Tel: 09 980 6700<br>Fax: 09 980 6788 |
| **E-mail address** | ANZinfo@thermofisher.com |

## Section 2 - Hazard(s) Identification

**Classification under Work Safe New Zealand**

**Classified as hazardous in accordance with the criteria of EPA New Zealand**

**HSNO Approval Number** **HSR002503**

**GHS Classification**

**Physical hazards**
Based on available data, the classification criteria are not met

**Health hazards**

| | |
|---|---|
| Acute Oral Toxicity | Category 4 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 4 |
| Carcinogenicity | Category 2 |
| Reproductive Toxicity | Category 1A |
| /; Effects on or via lactation | |
| Specific target organ toxicity - (repeated exposure) | Category 1 |

**Environmental hazards**

| | |
|---|---|
| Acute aquatic toxicity | Category 1 |

| | |
|---|---|
| Chronic aquatic toxicity | Category 1 |

**Label Elements**

**Signal Word** **Danger**

**Hazard Statements**
H351 - Suspected of causing cancer
H360 - May damage fertility or the unborn child
H362 - May cause harm to breast-fed children
H372 - Causes damage to organs through prolonged or repeated exposure
H410 - Very toxic to aquatic life with long lasting effects
H302 + H332 - Harmful if swallowed or if inhaled

**Precautionary Statements**
**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P263 - Avoid contact during pregnancy and while nursing
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P273 - Avoid release to the environment
**Response**
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P330 - Rinse mouth
P391 - Collect spillage
**Storage**
P403 - Store in a well-ventilated place
**Disposal**
P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards which do not result in classification**
Toxic to terrestrial vertebrates

# Section 3 - Composition and Information on Ingredients

| Component | CAS No | Weight % |
|---|---|---|
| Lead monoxide | 1317-36-8 | <=100 |

# Section 4 - First Aid Measures

**Description of first aid measures**

**General Advice** Show this safety data sheet to the doctor in attendance. Immediate medical attention is

| | |
|---|---|
| | required. |
| **New Zealand Emergency Tel.** | CHEMTREC®<br>09 980 6780 or +64 9 980 6780 |
| **Inhalation** | Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. |
| **Eye Contact** | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. |
| **Skin Contact** | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. |
| **Ingestion** | Do NOT induce vomiting. Call a physician or poison control center immediately. |
| **Self-Protection of the First Aider** | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. |
| **First Aid Facilities** | Eyewash, safety shower and washroom. |
| **Most important symptoms and effects** | None reasonably foreseeable. |
| **Notes to Physician** | Treat symptomatically. |

# Section 5 - Fire Fighting Measures

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which must not be used for safety reasons**
No information available.

**Specific Hazards Arising from the Chemical**
Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. Do not allow run-off from fire-fighting to enter drains or water courses.

**Hazardous Combustion Products**
Thermal decomposition can lead to release of irritating gases and vapors, lead oxides.

**Special protective equipment and precautions for fire fighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

# Section 6 - Accidental Release Measures

**Personal Precautions, Protective Equipment and Emergency Procedures**

**Emergency procedures**
Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

**Environmental Precautions**
Should not be released into the environment.

**Methods for Containment and Clean Up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

**Precautions to prevent secondary hazards**
Clean contaminated objects and areas thoroughly observing environmental regulations

**Reference to Other Sections**
Refer to protective measures listed in Sections 8 and 13.

# Section 7 - Handling and Storage

**Precautions for Safe Handling**

**Advice on safe handling**
Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**Conditions for Safe Storage, Including any Incompatibilities**

**Storage Conditions**
Keep containers tightly closed in a dry, cool and well-ventilated place.

**Incompatible Materials**
Strong oxidizing agents.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

# Section 8 - Exposure Controls and Personal Protection

**Control parameters**

**Exposure limits**
**UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.
**ACGIH** - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.
**AUS** - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]
Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

| Component | New Zealand WEL | Australia | ACGIH TLV | The United Kingdom |
|---|---|---|---|---|
| Lead monoxide | | TWA: 0.05 mg/m³ | TWA: 0.05 mg/m³ | STEL: 0.45 mg/m³ 15 min<br>TWA: 0.15 mg/m³ 8 hr |

**Biological limit values**
**ACGIH** - American Conference of Governmental Industrial Hygienists (ACGIH) TLVs® and BEIs®- Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices. 2022 Edition

| Component | New Zealand | Australia | ACGIH - Biological Exposure Indices | United Kingdom |
|---|---|---|---|---|
| Lead monoxide | | | 200 µg/L<br>Medium: blood<br>Time: not critical<br>Determinant: Lead | |

**Appropriate engineering controls**

**Engineering Measures**
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Individual protection measures, such as personal protective equipment**

**Eye Protection** Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

**Hand Protection** Protective gloves

| Glove material | Breakthrough time | Glove thickness | AUS/NZ Standard | Glove comments |
|---|---|---|---|---|
| Natural rubber, Nitrile rubber, Neoprene, PVC. | See manufacturers recommendations | - | AS/NZS 2161 | (minimum requirement) |

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

**Skin and body protection** Long sleeved clothing

**Repiratory Protection** Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of repiratory protective devices

**Recommended Filter type:** Particulates filter conforming to EN 143 (or AUS/NZ equivalent)
**Recommended half mask:-** Particle filtering: EN149:2001 (or AUS/NZ equivalent)
When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

# Section 9 - Physical and Chemical Properties

**Information on basic physical and chemical properties**

| | | |
|---|---|---|
| **Physical State** | Solid | |
| **Appearance** | Yellow | |
| **Odor** | Odorless | |
| **Odor Threshold** | No data available | |
| **pH** | 9.9 @ 20°C | 100 g/L |
| **Melting Point/Range** | 886 °C / 1626.8 °F | |
| **Softening Point** | No data available | |
| **Boiling Point/Range** | 1470 °C / 2678 °F | |
| **Flammability (liquid)** | Not applicable | Solid |
| **Flammability (solid,gas)** | No information available | |
| **Explosion Limits** | No data available | |
| **Flash Point** | No information available | **Method -** No information available |
| **Autoignition Temperature** | No data available | |
| **Decomposition Temperature** | No data available | |
| **Viscosity** | Not applicable | Solid |
| **Water Solubility** | 70 mg/L (20°C) | |
| **Solubility in other solvents** | No information available | |
| **Partition Coefficient (n-octanol/water)** | | |
| **Vapor Pressure** | 10 mmHg @ 1085 °C | |
| **Density / Specific Gravity** | No data available | |
| **Bulk Density** | No data available | |
| **Vapor Density** | Not applicable | Solid |
| **Particle characteristics** | No data available | |

**Other information**

| | |
|---|---|
| **Molecular Formula** | O Pb |
| **Molecular Weight** | 223.19 |
| **Evaporation Rate** | Not applicable - Solid |

# Section 10 - Stability and Reactivity

| | |
|---|---|
| **Reactivity** | None known, based on information available |
| **Stability** | Stable under normal conditions. |
| **Sensitivity to Mechanical Impact** | No information available |
| **Sensitivity to Static Discharge** | No information available |
| **Hazardous Polymerization** | Hazardous polymerization does not occur. |
| **Hazardous Reactions** | None under normal processing. |
| **Conditions to Avoid** | Incompatible products, Excess heat. |
| **Incompatible Materials** | Strong oxidizing agents. |
| **Hazardous Decomposition Products** | Thermal decomposition can lead to release of irritating gases and vapors. lead oxides. |

# Section 11 - Toxicological Information

**Acute Effects**

**Information on likely routes of exposure**

**Product Information**

| | |
|---|---|
| **Inhalation** | Not an expected route of exposure. |
| **Eyes** | Avoid contact with eyes. |
| **Skin** | Avoid contact with skin. |
| **Ingestion** | May be harmful if swallowed. |

**Numerical measures of toxicity**

**(a) acute toxicity;**

| | |
|---|---|
| **Oral** | No data available |
| **Dermal** | No data available |
| **Inhalation** | No data available |

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Lead monoxide | LD50 > 10000 mg/kg ( Rat ) | LD50 > 2000 mg/kg ( Rat ) | LC50 > 5.05 mg/L ( Rat ) 4 h |

**(b) skin corrosion/irritation;** No data available

**(c) serious eye damage/irritation;** No data available

**(d) respiratory or skin sensitization;**

| | |
|---|---|
| **Respiratory** | No data available |
| **Skin** | No data available |

**Sensitization** No information available

**(e) germ cell mutagenicity;** No data available

**(f) carcinogenicity;** No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen

| Component | New Zealand | Australia | New South Wales | Western Australia | IARC | EU | UK | Germany |
|---|---|---|---|---|---|---|---|---|
| Lead monoxide | | | | | Group 2A | | | |

**(g) reproductive toxicity;** No data available
**Reproductive Effects** Possible risk of impaired fertility
**Developmental Effects** May cause harm to the unborn child

**(h) STOT-single exposure;** No data available

**(i) STOT-repeated exposure;** No data available

**Target Organs** Blood, Central Nervous System (CNS), Peripheral Nervous System (PNS), Kidney.

**(j) aspiration hazard;** Not applicable
Solid

**Symptoms / effects,both acute and delayed**
No information available.

# Section 12 - Ecological Information

**Ecotoxicity**

**Aquatic ecotoxicity** The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|---|---|---|---|---|
| Lead monoxide | Pimephales promelas: LC50=0.3 mg/L 96h | EC50=0.13 mg/L 48h | | |

**Terrestrial ecotoxicity** There is no data for this product

**Persistence and Degradability** Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary

**Persistence** May persist, based on information available.

**Degradability** Not relevant for inorganic substances.
**Degradation in sewage treatment plant** Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Bioaccumulative Potential** May have some potential to bioaccumulate

**Mobility** Spillage unlikely to penetrate soil. The product is water soluble, and may spread in water

systems. Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

**Other adverse effects**

| | |
|---|---|
| **Endocrine Disruptor Information** | This product does not contain any known or suspected endocrine disruptors |
| **Persistent Organic Pollutant** | This product does not contain any known or suspected substance |
| **Ozone Depletion Potential** | This product does not contain any known or suspected substance |

# Section 13 - Disposal Considerations

**Waste treatment methods**

| | |
|---|---|
| **Waste from Residues/Unused Products** | Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations. |
| **Contaminated Packaging** | Dispose of this container to hazardous or special waste collection point. |
| **Other Information** | Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment. |

# Section 14 - Transport Information

**NZS 5433:2020**

| | |
|---|---|
| **UN-No** | UN3077 |
| **Proper Shipping Name** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| **Technical Shipping Name** | Lead (II) oxide |
| **Hazard Class** | 9 |
| **Packing Group** | III |

**IATA**

| | |
|---|---|
| **UN-No** | UN3077 |
| **Proper Shipping Name** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| **Technical Shipping Name** | Lead (II) oxide |
| **Hazard Class** | 9 |
| **Packing Group** | III |

**IMDG/IMO**

| | |
|---|---|
| **UN-No** | UN3077 |
| **Proper Shipping Name** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| **Technical Shipping Name** | Lead (II) oxide |
| **Hazard Class** | 9 |
| **Packing Group** | III |
| **Environmental hazards** | Dangerous for the environment<br>Product is a marine pollutant according to the criteria set by IMDG/IMO |
| **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | Not applicable, packaged goods |

**Special Precautions** No special precautions required. Please refer to the applicable dangerous goods regulations for additional information.

**Additional information** None known

# Section 15 - Regulatory Information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

| HSNO Approval Number | HSR002503 |
|---|---|

**National Regulations**
There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

**Certified handlers, tracking and controlled substance license requirements**
Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

**Prohibition or notification/licensing requirements**
Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

**International Regulations**

**Ozone Depletion Potential** This product does not contain any known or suspected substance

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Rotterdam Convention (PIC)** Not applicable

**Authorisation/Restrictions according to EU REACH**

| Component | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|---|---|---|---|
| Lead monoxide | - | Use restricted. See item 30. (see link for restriction details) Use restricted. See item 63. (see link for restriction details) Use restricted. See item 75. (see link for restriction details) | SVHC Candidate list - Toxic for reproduction (Article 57 c) |

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

*https://echa.europa.eu/authorisation-list*
*https://echa.europa.eu/substances-restricted-under-reach*
*https://echa.europa.eu/candidate-list-table*

**International Inventories**

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component | CAS No | NZIoC | AICS | EINECS | ELINCS | NLP | KECL | IECSC | TCSI |
|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lead monoxide | 1317-36-8 | X | X | 215-267-0 | - | - | KE-21926 | X | X |

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | PICCS | ISHL | ENCS |
|---|---|---|---|---|---|---|---|---|
| Lead monoxide | 1317-36-8 | X | ACTIVE | X | - | X | X | X |

**Legend:** X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

# Section 16 - Other Information

## This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

**Legend**

**NZIoC** - New Zealand Inventory of Chemicals
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**IECSC** - Chinese Inventory of Existing Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**TWA** - Time Weighted Average
**IARC** - International Agency for Research on Cancer
**NZS 5433:2020** - Transport of Dangerous Goods on Land
**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association
**MARPOL** - International Convention for the Prevention of Pollution from Ships
**LD50** - Lethal Dose 50%
**EC50** - Effective Concentration 50%
**WEL** - Workplace Exposure Limit
**DNEL** - Derived No Effect Level
**POW** - Partition coefficient Octanol:Water
**vPvB** - very Persistent, very Bioaccumulative
**VOC** - (Volatile Organic Compound)

**AICS** - Australian Inventory of Chemical Substances
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
**ENCS** - Japanese Existing and New Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**CAS** - Chemical Abstracts Service
**ACGIH** - American Conference of Governmental Industrial Hygienists
**PNEC** - Predicted No Effect Concentration
**OECD** - Organisation for Economic Co-operation and Development
**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code
**LC50** - Lethal Concentration 50%
**ATE** - Acute Toxicity Estimate
**RPE** - Respiratory Protective Equipment
**NOEC** - No Observed Effect Concentration
**BCF** - Bioconcentration factor
**PBT** - Persistent, Bioaccumulative, Toxic

**Key literature references and sources for data**
HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS
EPA Guide to classifying hazardous substances in New Zealand
EPA - Assigning a product to an existing HSNO approval guide

**Training Advice**
Chemical incident response training.
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

**Revision Date** 22-Mar-2023
**Revision Summary** SDS sections updated

**Disclaimer**

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text**

# End of Safety Data Sheet