

## Assay Litharge

Date of issue: 30/11/2023  
Revision No.: 1.02**SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY****1.1 Product Identifier**

Product form : Solid  
Substance Name : Lead II oxide; lead monoxide  
EC Index No. : 082-001-00-6  
EC No. : 215-267-0  
CAS No. : 1317-36-8  
Type of product : Lead monoxide

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

1.2.1 Relevant identified uses: Mining industry  
Materials for use in industrial applications. Refer to supplier for additional information.

1.2.2 Uses advised against:  
No additional information available.

**1.3 Details of the supplier of the safety data sheet.**

Associated Additives  
245 Lansdowne Road,  
Jacobs, 4052,  
Durban, SA

Postal:  
PO Box 12043  
Jacobs, 4026

**1.4 Emergency telephone number**

+27(031) 4681561

**SECTION 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

***Classification Regulation (EC) No 1272/2008 (CLP):***

Reprod., Cat 1A, H360Df  
Ac tox (orl) Cat 4, H302  
Ac tox (inh) Cat 4, H332  
STOT Rep Cat 2, H373  
Aq Chron Cat 1, H410

For the full text of the H statements mentioned in this section, see Section 16.

***Classification According to Directive 67/548/EEC or 1999/45/EC:***

R61, R62, R20/22, R33, R50, R53, T, N

***Adverse physicochemical, human health and environmental effects:***

May damage fertility and the unborn child, Harmful by ingestion, Harmful by inhalation,  
May cause damage to organs by repeated and/or prolonged exposure, Very toxic to  
aquatic life with long lasting effects..

**2.2 Label Elements**

Labelling (Regulation (EC) No 1272/2008

***Hazard pictograms***



**Signal word:** DANGER

**Hazard Statements**

H360Df: May damage fertility and the unborn child by ingestion or inhalation.  
H302: Harmful if swallowed.  
H332: Harmful if inhaled.  
H373: May cause damage to organs (kidney, nerves, brain) by ingestion or inhalation.  
H410: Very toxic to aquatic life with long lasting effects.

**Precautionary Statements**

Prevention:

P201: Obtain special instructions before use.  
P202: Do not handle until all safety precautions have been read and understood.  
P281: Use personal protective equipment as required.  
P271: Use only outdoors or in a well ventilated area.  
P260: Do not breathe dust.  
P262: Avoid contact during pregnancy.  
P270: Do not eat, drink or smoke when using this product.

Response Statements:

P314: Get medical attention if you feel unwell.  
P308+P313: IF EXPOSED OR CONCERNED immediately get medical advice/attention.  
P301+P312: IF SWALLOWED call a POISON CENTRE or doctor physician if you feel unwell.  
P330: Rinse mouth.  
P304+P340: IF INHALED Remove to fresh air and keep at rest in a position comfortable for breathing.

Storage:

P405: Store locked up.

Disposal:

P501: Dispose of contents/container isolated from other waste in sealed labelled containers to a registered hazardous waste facility.

**2.3 Other Hazards:**

***Other hazards not contributing to the classification***

No additional information.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substance**

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Lead (II) Oxide	CAS:1317-36-8; EC 215-267-0	98-100	Reprod., Cat 1A, H360Df; Ac tox (orl) Cat 4, H302; Ac tox (inh) Cat 4, H332; STOT Rep Cat 2, H373; Aq Chron Cat 1, H410

Full text of R- and H-statements: see section 16

**3.2 Mixture**

Not applicable

## SECTION 4. FIRST AID MEASURES

### 4.1 Description of First Aid Measures

#### **First-aid measures general:**

Avoid contact during pregnancy. Seek immediate medical attention if product has been ingested. Obtain medical attention if feeling unwell.

#### **First aid measures after inhalation:**

Remove victim from area of exposure, avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult obtain medical attention.

#### **First aid measures after skin contact:**

If skin contact occurs, remove contaminated clothing and wash skin with soap and water. If irritation occurs, seek medical advice.

#### **First aid measures after eye contact:**

If in eyes, wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

#### **First aid measures after ingestion:**

Rinse mouth with water. If swallowed, give a glass of water to drink. Seek immediate medical assistance.

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

#### **Symptoms/injuries after inhalation:**

Local irritation of bronchia and lungs can occur and, in cases of acute exposure, symptoms such as metallic taste, chest and abdominal pain, and increased lead blood levels may follow.

#### **Symptoms/injuries after skin contact:**

Lead and lead compounds may be absorbed through the skin on prolonged exposure; the symptoms of lead poisoning described for ingestion exposure may occur. Contact over short periods may cause local irritation, redness and pain.

#### **Symptoms/injuries after eye contact:**

Absorption can occur through eye tissues but the more common hazards are local irritation or abrasion.

#### **Symptoms/injuries after ingestion:**

The symptoms of lead poisoning include abdominal pain and spasms, nausea, vomiting, headache. Acute poisoning can lead to muscle weakness, "lead line" on the gums, metallic taste, definite loss of appetite, insomnia, dizziness, high lead levels in blood and urine with shock, coma and death in extreme cases.

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

Treat symptomatically

## SECTION 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

#### **Suitable extinguishing media:**

Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

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**Not suitable:**

Do not use strong water jet.

**5.2 Special hazards arising from the substance or mixture**

**Hazardous decomposition products in case of fire:**

Decomposes on heating emitting toxic fumes.

**5.3 Advise for firefighters**

Protection during firefighting:

Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Contaminated waste and fire-fighting waste water must be removed in compliance with regulations.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

**6.1.1 For non-emergency personnel:**

Emergency procedures:

Ventilate spillage area. Isolate area. Prevent access to unnecessary and unprotected personnel. Evacuate personnel upwind to a safe area. Avoid dust formation. Wear recommended personal protective equipment.

**6.1.2 For emergency responders:**

Personal protective equipment:

As a minimum, use protective clothing, gloves, goggles and respirator. Refer to Section 8.

**6.2 Environmental precautions:**

Prevent release to the environment. Avoid dust formation. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

**6.3 Methods and materials for containment and cleaning up:**

**Methods for cleaning up:**

Avoid dust formation. Vacuum up spillage and collect in suitable container for disposal.

**Other information:**

Dispose of materials or solid residues at an authorized site.

**6.4 Reference to other sections:**

For further information refer to section 13.

**SECTION 7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe dust. Ensure good ventilation of the work station. If possible use only under local exhaust ventilation. Wear recommended personal protective equipment. See section 8.

**Hygiene measures:**

Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

**7.2 Conditions for safe storage, including any incompatibilities:**

**Storage conditions:**

Store in tightly sealed, labelled containers in a cool, dry, well ventilated area. Store away from foodstuffs. The workplace should be kept in a clean state and free of lead waste/dust.

When lead is accidentally spilled or airborne lead is accidentally released into the workplace, corrective measures must be taken immediately, before any work is continued.

**Incompatible products:**

Strong oxidizers, strong reducing agents, reactive metals.

**Incompatible materials:**

Excess heat.

**Suitable packaging materials:**

Steel drums, paper bags, polypropylene or polyethylene bags.

**7.3 Specific end users:**

No additional information available

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

Lead Monoxide CAS 1317-36-8		
OHSA (SA) (Lead Regulations)	OEL: 0.15 mg/m <sup>3</sup> lead in air.	Action Level: 0.075 mg/m <sup>3</sup> lead in air.
<b>ACGIH TLV:</b> TWA: 0.05mg/m <sup>3</sup>	<b>NIOSH IDLH:</b> IDLH: 100mg/m <sup>3</sup> TWA: 0.05mg/m <sup>3</sup>	<b>QUEBEC:</b> TWA: 0.05mg/m <sup>3</sup>
<b>MEXICO OEL:</b> TWA: 0.15mg/m <sup>3</sup>	<b>ONTARIO TWA EV:</b> TWA: 0.05mg/m <sup>3</sup>	<b>OSHA PEL:</b> TWA: 0.05mg/m <sup>3</sup>

**Measuring and Monitoring:**

The levels of lead in air shall be measured and monitored in compliance to the Lead Regulations.

**Measurement Method**

Particulate filter; Nitric acid/hydrogen peroxide; Atomic absorption spectroscopy (ASTM 1164:1990, NIOSH 7082).

**Biological Monitoring and Medical Surveillance:**

The employer shall ensure that employees attend an Occupation Medical Practitioner for biological monitoring and surveillance in compliance with the Lead Regulations. The following tests should be included: Lead in blood, ALA in urine, Coproporphyrin, Haemoglobin.

**8.2 Exposure controls**

**Appropriate engineering controls:**

Provide eye wash and shower in work area. Processes with the product should be isolated from other processes. Ensure good ventilation of the work station. If possible use only under local exhaust ventilation. Where the OEL may be exceeded, the area should be designated as a restricted zone and only employees wearing appropriate PPE may enter.

**Administrative Controls:**

Safe Work Procedures must be available and employees must be trained. Spills should be cleaned up immediately. The number of person exposed should be minimised.

**Hygiene Measures:**

No eating, smoking or drinking should be allowed in the work area. Contaminated clothing must be washed before re-use and should not be allowed out of the workplace. After removal of overalls, hands and face should be thoroughly washed using soap and water. The use of a nailbrush is recommended to clean thoroughly. A barrier cream can be applied to exposed skin to reduce itchiness. Wash hands before eating, drinking or smoking. Regular cleaning of masks and clothing is essential

**Personal protective equipment:**

Hand protection	Rubber or plastic chemical resistant gloves
Eye protection	Chemical safety goggles.
Skin and body protection	Long sleeved overall without pockets.
Respiratory protection	If the exposure levels are > action limit, an approved respirator capable of keeping the exposure at or below the OEL shall be used.



**Environmental exposure controls:** Avoid release to the environment.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Product form:	Solid
Appearance	Canary yellow powder
Odour	Odourless
Odour threshold	No data available
pH	Not applicable
Relative evaporation rate (butylacetate=1)	Not applicable
Melting point/Freezing point	600°C (@101.3Kpa)
Boiling point	600°C (@101.3Kpa)
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature:	300-450°C
Flammability (solid, gas)	Not applicable
Vapour pressure	1mm Hg @ 943°C
Vapour density	Not applicable
Relative density	9.96 @ 22.5 °C
Solubility	Slightly soluble in water, soluble in acetic acid, dilute nitric acid, alkali solutions.
Log Pow	No data available

Viscosity, kinematic	Not applicable
Viscosity, dynamic	Not applicable
Explosive properties	Not applicable
Explosive limits	Not applicable
Oxidising properties	No data available
Molecular mass	223.2 g/mol
Molecular formula	PbO

## SECTION 10 STABILITY AND REACTIVITY

### 10.1 Reactivity:

The product is non-reactive under recommended conditions of use, storage and transport.

### 10.2 Chemical stability

Stable under recommended conditions of use, storage and transport.

### 10.3 Possibility of hazardous reactions

None under recommended processing conditions.

### 10.4 Conditions to avoid

Incompatible products, excess heat.

### 10.5 Incompatible materials

Strong reducing agents, Strong oxidizing agents, acids, chemically active metals.

### 10.6 Hazardous decomposition products

Lead oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects:

Acute toxicity: Harmful if swallowed.  
Harmful if inhaled.

Lead II oxide CAS 1317-36-8	
LD50 (RAT)	2000 - 5000mg/kg Oral – No adverse effect observed LD50 2000 mg/kg bw Inhalation route - No adverse effect observed LD50 2000 mg/kg bw Dermal route - No adverse effect observed LD50 2000 mg/kg bw

Serious eye damage/irritation	Not classified
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified

Carcinogenicity	Probably carcinogenic to humans. (IARC 2A) (Lead oxide 30-60%) NTP: Reasonably anticipated to be a human carcinogen (Lead oxide 30-60%) OSHA: No data available. ECHA: Oral route: Adverse effect observed NOAEL 7.8 mg/kg bw/day (chronic, rat)
Reproductive toxicity	May damage fertility and the unborn child by ingestion or inhalation.
Specific target organ toxicity (single exposure)	Not classified.
Specific target organ toxicity (repeated exposure)	May cause damage to organs (kidney, nerves, brain) by ingestion or inhalation.
Aspiration hazard	Not classified

## SECTION 12 ECOLOGICAL INFORMATION

**12.1 Ecology – general:** Very toxic to aquatic life with long lasting effects.

Lead II oxide CAS 1317-36-8	
LC50 fish 1 (96hr) Pimephales promelas	0.298mg/l
EC50 invertebrates (48 h) Daphnia Magna	0.132mg/l

### 12.2 Persistence and degradability

Insoluble in water, may persist in the environment.

### 12.3 Bioaccumulative potential

This material may bioaccumulate to some extent.

### 12.4 Mobility

Mobility not likely due to low solubility.

### 12.5 Results of PBT and vPvB assessment

No data available

### 12.6 Other adverse effects

No additional information available


## SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods: The product should be recycled if possible. Containers and covers should be cleaned and decontaminated in a controlled manner. Lead waste should be kept separate from other waste in sealed, labelled containers and disposed of in consultation with licensed waste disposal company in accordance with local legal requirements.

## SECTION 14 TRANSPORT INFORMATION



In accordance with ADR / IMDG / IATA

	ADR	IMDG	IATA	Class Diamond
UN Number	2291	2291	2291	
Proper Shipping Name	Lead compound, soluble N.O.S. (Lead II Oxide)	Lead compound, soluble N.O.S. (Lead II oxide)	Lead compound, soluble N.O.S. (Lead II oxide)	
Hazard Class	6.1	6.1	6.1	
Packing Group	III	III	III	
Marine pollutant	Yes	Yes	Yes	

## SECTION 15 REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

#### 15.1.1 EU Regulations

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Lead monoxide

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).: Lead monoxide

#### 15.1.2 National Regulations:

Environment Conservation Act (73/1989)

Hazardous Substances Act (15/1973)

Lead Regulations 2001

National Environmental Management Act (39/2004)

Occupational Health & Safety Act (85/1993)

National Water Act (36/1998)

### 15.2 Chemical Safety Assessment

Chemical safety assessment has been carried out.

## SECTION 16 OTHER INFORMATION

### International Regulations:

All of the components in the product on the following Inventory List: X =listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Lead Monoxide	X	X	-	215-235-6	-		X	X	X	X	X

### Legend

X - listed

E – Indicates a substance that is the subject of Section 5(e) Consent order under TSCA

F – Indicates a substance that is the subject of Section 5(f) Rule under TSCA

N – Indicates a polymeric substance containing no free-radical initiator in its inventory name but

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is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P – Indicates a commenced PMN substance

R – Indicates a substance that is the subject of a Section 6 risk management rule under TSCA

S – Indicates a substance that is identified in a proposed or final Significant New Use rule

T - Indicates a substance that is the subject of a Section 4 risk test rule under TSCA

XU - Indicates a substance exempt from reporting under the inventory Update rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has no number-average molecular weight of 1000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactant included in a specified list of low concern reactants that comprise one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS- No	Weight %	SARA 313-Threshold values %
Lead Monoxide	1317-36-8	98	0.1

SARA 311/312 Hazardous Categorization

Acute health Hazard - Yes

Chronic health Hazard – Yes

Fire Hazard – No

Sudden release or pressure Hazard – No

Reactive Hazard – No

Clean water Act - *Not applicable*

Component	CWA- Hazardous Substances	CWA- Reportable Quantities	CWA- Toxic pollutants	CWA- Priority pollutants
Lead Monoxide	-	-	X	-

Clean air Act - *Not applicable*

Component	HAPS Data	Class 1 Ozone Depleters	Class 2 Ozone Depleters
Lead Monoxide	X		

OSHA – Occupation Safety and Health Administration

OSHA – United States Occupation Safety and Health Administration

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Lead Monoxide	30µg/m <sup>3</sup> Action level 50µg/m <sup>3</sup> TWA	-

Cercla - *Not applicable*

California Proposition 65 – *This product contains the following proposition 65 chemicals*

Component	CAS-No	California Prop 65	Prop 65 NSRL	Category
Lead Monoxide	1317-36-8	Carcinogen Developmental	-	Developmental Carcinogen

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State Right-to-know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Lead Monoxide	X	X	X	X	X

US Department of Transport

Reportable Quantity (RQ) : N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

US Department of Homeland Security

This product does not contain any DHS chemicals.

National Fire Protection Association:

Health = 3

Flammability = 0

Reactivity = 0

Physical hazards = N/A

**Other International Regulations**

**Mexico- Grade** - No information available

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations ( CPR) and the MSDS contains all information required by the CPR

**WHMIS Hazard Class** D1B Toxic materials  
D2A Very toxic materials



Full text of R-, H- and EUH-statements:

Reprod., Cat 1A, H360Df	Reproductive toxicity, Category 1A, H360Df: May damage fertility and the unborn child by ingestion or inhalation.
Eff on or via lact, H362	Effects on or via lactation, H362, May cause harm to breast fed children.
Ac tox (orl) Cat 4, H302	Acute toxicity (ORAL) Category 4, H302 Harmful if swallowed
Ac tox (inh) Cat 4, H332	Acute toxicity (Inhalation) Category 4, H332: Harmful if inhaled.
STOT Rep Cat 2, H373	Specific Target Organ Toxicity Category 2, H373: May cause damage to organs (kidney, nerves, brain) by ingestion or inhalation.
Aq Chron Cat 1, H410	Aquatic Chronic toxicity Category 1, H410: Very toxic to aquatic life with long lasting effects.
R61	May cause harm to the unborn child
R62,	Possible risk of impaired fertility
R20/22	Harmful by inhalation and if swallowed
R33,	Danger of cumulative effects

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R50	Very toxic to aquatic organisms
R53	May cause long term adverse effects in the environment
T,	Toxic
N	Harmful for the Environment

### SDS EU Associated Additives

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Rev 1.00	24/04/2018	Updated to GHS
Rev 1.01	24/10/2023	Update
Rev 1.02	30/11/2023	Updated ECHA latest