

# Lead

**SDS DATE: 12/12/2022**
**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**
**PRODUCT NAME:** Lead or Lead Alloy

**CHEMISTRY TERM:** Pb

**SYNONYM:** Soft lead, Antimonial lead

**MANUFACTURER:** Terrapure BR Ltd.

**ADDRESS:** 1333 Tonolli Road, Mississauga, Ontario, Canada L4Y 4C2

**PHONE:** 905-279-9555



**CANUTEC PHONE:** 1-613-996-6666

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**CHEMICAL NAME:** Metal

**PRODUCT USE:** Used in manufacturing of batteries, communication cable, paints, pigments, chemicals, solders, & ammunition.

**SECTION 2: HAZARDS IDENTIFICATION**

Health	Environmental
	
<p><b>Hazard Statements</b></p> <p><b>DANGER!</b></p> <p>Acute Toxicity (oral, inhalation, dermal), category 4</p> <p>Reproductive toxicity, category 1A</p> <p>May damage fertility or the unborn child if ingested or inhaled.</p> <p>May cause cancer if ingested or inhaled.</p> <p>Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure.</p>	<p><b>Precautionary Statements</b></p> <p>Wash thoroughly after handling.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wear protective gloves/protective clothing, eye protection/face protection and respirator with appropriate protection factor.</p> <p>Avoid breathing dust/fume/gas/mist/vapors/spray.</p> <p>Avoid contaminating air and water.</p>

Health		Environmental	
Acute Toxicity (Oral/Dermal/Inhalation)	<b>Category 4</b>	Acute Aquatic	<b>Category 1</b>
Reproductive	<b>Category 1A</b>	Chronic Aquatic	<b>Category 1</b>
Carcinogenicity (lead compounds)	<b>Category 1B</b>		
Specific Target Organ Toxicity (repeated exposure)	<b>Category 1A</b>		
	<b>Category 2</b>		

Very hazardous in cases of ingestion and inhalation. Slightly hazardous in case of skin contact.

**INHALTION/INGESTION:** Inhalation or ingestion of lead or fumes may result in headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbance, weight loss, anemia leg, arm, and joint pain. Prolong exposure may also cause central nervous system damage (e.g. fatigue, tremors, hypertension, hallucination, convulsion, delirium), gastrointestinal disturbances, anemia, wrist drop, and kidney dysfunction. Pregnant women should be protected from excessive exposure to prevent lead crossing the placental barrier and causing infant neurological disorders.

**SKIN CONTACT:** Direct skin or eye contact may cause irritation

**CARCINOGEN:** Lead is classified as Category 2 WHMIS 2015, Group 2B carcinogen by international Agency for Research on Cancer (IARC) and the U.S. Environment Protection Agency (EPA)



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

**ENGINEERING CONTROLS:** Use local exhaust when PEL is exceeded.

**VENTILATION:** Use adequate or local ventilation located at the source so as to remove the fumes, dust and vapor. Local exhaust is recommended for melting, casting, welding, grinding, flame cutting or burning and use of lead dust.

**RESPIRATORY PROTECTION:** Use of approved respiratory mask is warranted where concentration of fume, dust and vapor in the air exceed exposure standards.

**EYE PROTECTION:** Safety glasses/face shield/full face respirator should be worn in the presence of dust generated from the melting process.

**SKIN PROTECTION:** Safety gloves should be worn to avoid direct hand contact with lead, so as to avoid transferring contaminant into mouth (ingestion). Work clothes should cover body. Soiled work clothes should be washed within the work premises. To prevent contamination do not wear work clothes outside the work area. Contaminated clothing should be changed and laundered before reuse. Inform laundry personnel of contaminant hazard. Workers should not take dirty contaminated clothes home and launder them.

**WORK HYGIENIC PRACTICES:** Proper hygiene methods should be used when treating and storing lead. It should be forbidden to eat, drink or smoke in these areas. Workers who have direct contact with lead should thoroughly wash their hands and face before eating, drinking or smoking. Do not bite fingernails. Fingernails should be cleaned while washing hands.

**EXPOSURE LIMITS:**

*Chemical & Common Name	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Lead and Lead Compounds (inorganic)	0.05	0.05	0.05	0.05	0.05	0.15 (b)
Antimony	0.5	0.5	0.5	0.5	0.5	0.5 (b,e)
Arsenic	0.01	0.01	0.01			
Tin	2	2	2			

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**BOILING POINT:** 1725°C

**MELTING POINT:** 327°C

**SOLUBILITY IN WATER:** Insoluble

**EVAPORATION RATE:** N/A

**FLAMMABILITY:** Non-Flammable

**VAPOUR PRESSURE (mm Hg):** Negligible at 20° C

**DENSITY:** 11.36

**pH AS SUPPLIED:** N/A

**PHYSICAL STATE:** Solid

**DECOMPOSITION TEMPERATURE:** None

**APPEARANCE:** Malleable, bluish-white to silver-gray solid metal

**ODOUR:** No odour

**SECTION 10: STABILITY AND REACTIVITY**

**STABILITY:** Stable X Unstable \_\_\_\_  
 This product is stable under normal conditions at ambient temperature.

**CONDITIONS TO AVOID:** Incompatible materials, excess heat.

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**INCOMPATIBILITIES (MATERIALS TO AVOID):** Can react vigorously with oxidizing materials. Incompatible with sodium carbide, chlorine trifluoride, trioxane + hydrogen peroxide, ammonium nitrate, sodium azide, disodium acetylide, sodium acetylide, hot concentrated nitric acid, hot concentrated hydrochloric acid, hot concentrated sulfuric acid, and zirconium.

**HAZARDOUS POLYMERIZATION:** Will not occur

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### SECTION 11: TOXICOLOGICAL INFORMATION

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**EMERGENCY OVERVIEW:** Under normal conditions of use, this product does not present a health hazard.

**ROUTES OF ENTRY:**

Absorbed through skin. Inhalation. Ingestion.

**INHALATION:**

In an industrial setting, exposure to lead mainly occurs from inhalation of dust or fumes.

Lead dust or fumes: Can irritate the upper respiratory tract (nose, throat) as well as the bronchi and lungs by mechanical action. Lead dust can be absorbed through the respiratory system. However, inhaled lead does not accumulate in the lungs. All of an inhaled dose is eventually absorbed or transferred to the gastrointestinal tract.

Inhalation effects of exposure to fumes or dust of inorganic lead may not develop quickly. Symptoms may include metallic taste, chest pain, decreased physical fitness, fatigue, sleep disturbance, headache, irritability, reduced memory, mood and personality changes, aching bones and muscles, constipation, abdominal pains, decreasing appetite. Inhalation of large amounts may lead to ataxia, delirium, convulsions/seizures, coma, and death.

Lead metal foil, shot, or sheets: Not an inhalation hazard unless metal is heated. If metal is heated, fumes may be released. Inhalation of these fumes may cause "fume metal fever", which is characterized by flu-like symptoms.

Symptoms may include metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain, generalized muscle pain/aches, and increased white blood cell count.

**INGESTION:**

Lead metal granules or dust: The symptoms of lead poisoning include abdominal pain or cramps (lead colic), spasms, nausea, vomiting, headache, muscle weakness, hallucinations, distorted perceptions, "lead line" on the gums, metallic taste, loss of appetite, insomnia, dizziness and other symptoms similar to that of inhalation. Acute poisoning may result in high lead levels in the blood and urine, shock, coma and death in extreme cases.

Lead metal foil, shot or sheets: Not an ingestion hazard for usual industrial handling.

**SKIN CONTACT:**

Lead metal granules or dust: May cause skin rash / irritation by mechanical action.

Lead metal foil, shot or sheets: Not likely to cause skin irritation

**EYE CONTACT:**

Lead metal granules or dust: Can irritate eyes by mechanical action.

Lead metal foil, shot or sheets: No hazard. Will not cause eye irritation.

**EFFECTS OF OVEREXPOSURE - ACUTE:**

Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

**EFFECTS OF OVEREXPOSURE - CHRONIC:**

Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50 µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

**CARCINOGENICITY:**

Lead is listed by IARC as a Group 2A - likely in animals at extreme doses. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F, this is approximately equivalent to GHS Category 1B.

Proof of carcinogenicity in humans is lacking at present.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:**

Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

**ACUTE TOXICITY:**

LD50 oral rat > 2000 mg/kg body weight (Rat; Weight of evidence)

LD50 dermal rat > 2000 mg/kg body weight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)

ATE US (oral) 500,000 mg/kg body weight

ATE US (gases) 4500,000 ppmV/4h

ATE US (vapors) 11,000 mg/l/4h

ATE US (dust, mist) 1,500 mg/l/4h

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**ADDITIONAL INFORMATION:** Lead metal is not considered to be acutely toxic. It is not easily inhaled or ingested, and if it is accidentally ingested normally passes through the gastrointestinal system without significant absorption into the body. Lead is not easily absorbed through the skin.

### SECTION 11 NOTES:

#### Additional Health Data:

All heavy metals, including the hazardous ingredients in this product, are taken into the body primarily by inhalation and ingestion. Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8. Follow good personal hygiene to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving the work site. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated areas and never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated from children and their environment.

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### SECTION 12: ECOLOGICAL INFORMATION

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**ECOLOGICAL INFORMATION:** Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain. Most studies include lead compounds and not elemental lead.

**BOD<sub>5</sub> and COD:** Not available.

**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

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### SECTION 13: DISPOSAL CONSIDERATIONS

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**WASTE DISPOSAL METHOD:** Waste must be disposed of in accordance with federal, provincial and local environmental control regulations. Do not dump into any sewer, on the ground, or into any body of water. All disposal practices must be in compliance with applicable laws and regulations. Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.

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### SECTION 14: TRANSPORT INFORMATION

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#### REGULATED FOR TRANSPORT OF DANGEROUS GOODS

**PROPER SHIPPING NAME:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (LEAD)

**HAZARD CLASS:** 9

**ID NUMBER:** UN3077

**PACKING GROUP:** III

**LABELS:** Miscellaneous

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### SECTION 15: REGULATORY INFORMATION

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**CANADA WHMIS Classification (CPR, SOR/88-66):** Carcinogenicity, Reproductive toxicity, Specific target organ toxicity - repeated exposure.

**HMIS RATINGS:** Health: 1 Flammability: 0 Physical: 0

**NFPA RATINGS:** Health: 1 Flammability: 0 Instability: 0

**PROTECTIVE EQUIPMENT:** Gloves, Lab coat, Dust respirator. Safety glasses. Be sure to use an approved / certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

**CANADIAN DOMESTIC SUBSTANCES LIST (DSL):** All ingredients are listed.

**CANADIAN NPRI INGREDIENT DISCLOSURE LIST (LIMIT 0.1%):** none of the ingredients are listed

**CANADIAN NPRI INGREDIENT DISCLOSURE LIST (LIMIT 1%):** none of the ingredients are listed

**REGULATION (EC) NO 1272/2008 (CLP):** Carcinogenicity, category 2, Reproductive toxicity, category 2, Specific target organ toxicity - repeated exposure, category 2, Hazardous to the aquatic environment - acute hazard, category 1, Hazardous to the aquatic environment - chronic hazard, category 1.

Listed on the United States TSCA (Toxic Substances Control Act) inventory

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Listed on United States SARA Section 313

Not listed on the United States SARA Section 313

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**SECTION 16: OTHER INFORMATION**

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**PREPARATION INFORMATION:** Tonolli Canada Health & Safety Department

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