

SAFETY DATA SHEET

SECTION 1: PRODUCT and COMPANY IDENTIFICATION

Name of Product	Lead or Lead alloy
Chemistry Term	Pb
Synonym	Soft lead, Antimonial lead
Chemical Group	Metal
Molecular Weight	207
WHMIS class	Classes D-2A

Lead is a gray metal, bluish and malleable. Mainly used in the manufacturing of batteries, communication cable, paints, pigments, chemicals, solders and ammunition.

SECTION 2: COMPOSITION and INFORMATION ON INGREDIENTS

The percentages of hazardous elements are the following:

Tonolli code	Lead %	Arsenic %	Antimony %	Tin %
Pure/Soft	99 to 99.97			
Antimonial	93 to 98.5	0.05 to 0.5	1.5 to 5	0.05 to 1




Element	C. A. S. *	O.E.L.'s**	Symbol	Designated Substance
Lead	7439-92-1	0.05 mg/m ³	Pb	Yes (OHSA Reg 843)
Arsenic	7440-38-2	0.2 mg/m ³	As	Yes (OHSA Reg 836)
Antimony	7440-36-0	0.5 mg/m ³	Sb	No
Tin	7440-31-5	2 mg/m ³	Sn	No

Threshold Limits Values for Chemical Substances and Physical Agents, A. C. G. I. H., 1992-1993. Individual provinces, states or country may have differing values.

* C.A. S.: Chemical Abstracts Service Registry Number

** O.E.L.: Occupational Exposure Limits (T.L.V., Threshold Limit Value)

GHS Label Elements

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

SECTION 3: HAZARDS IDENTIFICATION

Potential Acute Health Effects:

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

Inhalation/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 Group 2B carcinogen by international Agency for Research on Cancer (IARC) and the U.S. Environment Protection Agency (EPA)

Arsenic is classified as class 1 to humans. Sufficient evidence of Carcinogenicity.

SECTION 4: FIRST AID MEASURES

Inhalation: Remove from exposure area to fresh air. Support breathing and administer oxygen, if required seek medical attention immediately.

Skin contact: Remove contaminated clothing and promptly wash affected area with soap and water.

Eye contact: Flush with water. If irritation persists, seek medical attention.

Ingestion: If victim is conscious, seek medical attention immediately, dilute stomach contents with water or milk and induce vomiting under medical direction.

SECTION 5: FIRE AND EXPLOSION DATA

Flammable/Combustible Properties: This product does not present fire or explosion hazards as shipped. Small chips, turnings, dusts and fines from processing may be readily ignitable.

Fire/Explosion: May be a potential hazard under the following conditions;

- Dusts or fines in contact with certain metal oxides Contact with disodium acetylide, chlorine trifluoride, or fused ammonium nitrate may result in explosion.
- Molten metal in contact with water/moisture or other metal oxides. Moisture entrapped in molten metal can be explosive. Contact of molten lead with other metal oxides can initiate a thermite reaction.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup: Stop releases, if possible. Avoid contact with any spilled material. Contain spill, isolate area and avoid entry. Return spill to process and dispose of contaminated material as per regulations.

Personal Precautions: Protective equipment, gloves, and respirators should be worn when exposure to hazardous levels of lead, fumes or dust.

Environment Precautions: Lead and its compounds can pose a severe threat to the environment. Contamination of water and air should be prevented.

SECTION 7: HANDLING AND STORAGE

Store lead in a dry place away from incompatible material. Lead ingots suspected of containing moisture should be THOROUGHLY DRIED before added to a molten bath. Ingots may contain cavities that collect moisture. Entrained moisture will expand explosively when immersed in molten bath.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTIVE EQUIPMENT

Respiratory devices: Use of approved respiratory mask is warranted where concentration of fume, dust and vapor in the air exceed standards.

Safety Gloves: Should be worn to avoid direct hand contact with lead so as to avoid transferring contaminant into mouth.

Safety Glasses: Should be worn in the presence of dust generated from the melting process.

Coveralls: 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.

Ventilation: To be located at the source so as to remove the fumes, dust and vapor.

Hygiene Prevention: 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Atomic Weight: 207.2

Density: 11.36

Boiling Point: 1725 Celcius

Melting Point: 327 Celcius

SECTION 10: STABILITY AND REACTIVITY

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, excess heat

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

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, zirconium.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Entry: Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals:

LD50: Not available.

LC50: Not available.

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC.

May cause damage to the following organs: blood, kidneys, central nervous system (CNS).

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential:

Skin:

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

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

Eyes:

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

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

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, reduces 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.

SECTION 12: ECOLOGICAL INFORMATION

Eco toxicity: Not available.

BOD5 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.

Special Remarks on the Products of Biodegradation: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal:

Waste must be disposed of in accordance with federal, provincial and local environmental control regulations.

SECTION 14: TRANSPORT INFORMATION

TDG Classification: Not a TDG controlled material.

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

SECTION 15: OTHER REGULATION INFORMATION

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

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

SECTION 16: OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if has been advised of the possibility of such damages.

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