US – OSHA SAFETY DATA SHEET

Issue Date: 29-May-2015 **Revision Date:**

1. IDENTIFICATION

Product Name: Lead Products

Synonyms: Sheet lead, Strip lead, Lead plate, Lead flashings, Plumbing lead, Lead ingot, Lead pigs, Lead pipe, Lead bends, Lead wire, Came lead, Lead extrusions, Lead bricks, Lead wool, Lead anodes, Bullet lead, Lead bullets, Lead billets, Lead castings, Machined lead, Ballast lead, Other miscellaneous lead products. Powder-coated lead products and Painted lead products.

Recommended Uses: Roofing, non-potable plumbing, radiation shielding, ballast, nuclear shielding, etc.

Uses Advised Against: Jewelry, toys, potable plumbing

Manufacturer:

Mayco Manufacturing, LLC (d.b.a. Mayco Industries)
18 West Oxmoor Road
Birmingham, AL 35209
Ph: 205-942-4242

2. HAZARDS IDENTIFICATION

Classification

This product is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Carcinogenicity	Category 1B
Reproductive toxicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

Label elements

Danger

Hazard statements

Lead - May cause cancer.
May damage fertility or the unborn child.
May cause harm to breast-fed children.
Cause damage to central nervous system, blood formation and kidneys and cardiovascular system through prolonged or repeated exposure.

Antimony – Dust or fume will be irritant.
Antimony causes nasal septal ulceration and stomach lining irritation.

Appearance: Gray with bluish or silvery cast depending on alloy

Physical state: Solid
Odor: Odorless

Precautionary Statements – Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements – Response
IF exposed or concerned: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements – Storage
Store locked up

Precautionary Statements – Disposal
Dispose of contents/container to an approved waste disposal plant

Other information

- Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Material	% by Wt.	CAS #	OSHA EXPOSURE LIMIT
Lead	90 – 99.99	7439-92-1	0.05 mg/cubic meter
Antimony	0 – 9	7440-36-0	0.50 mg/cubic meter
Tin	0 – 2	7440-31-5	2.00 mg/m³

4. FIRST AID MEASURES

First aid measures

Eye Contact In case of eye contact, immediately flush eyes with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention if irritation persists. Do not rub affected area.

Skin Contact Wash off immediately with soap and plenty of water. If skin irritation persists, call a Physician.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical Attention immediately. If conscious, have victim clear nasal passages.

Ingestion Seek immediate medical attention. Rinse mouth. Drink plenty of water. Induce Vomiting, but only if victim is fully conscious.

Most important symptoms and effects, both acute and delayed

Symptoms **Acute (short term) exposure:** Lead is a potent, systemic poison; taken in large enough Doses, lead can kill in a matter of days. Acute encephalopathy may arise which develops

Quickly to seizures, coma and death from cardiorespiratory arrest.
Chronic (long term) exposure: Chronic overexposure to lead may result in severe damage To blood forming. Nervous, urinary and reproductive systems. Some common symptoms Of chronic overexposure include loss of appetite, metallic taste in mouth, anxiety, Constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, Nervous irritability, muscle and joint pain, fine tremors, numbness, dizziness, Hyperactivity, colic.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE – FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, foam or CO2

Specific hazards arising from the chemical: May give off toxic fumes in a fire, including lead fumes.

Explosion data:

Sensitivity to Mechanical Impact: None known.

Sensitivity to Static Discharge: None known.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Lead is not considered to be a fire hazard. Powder/dust is flammable when heated or exposed to flame.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evaluate personnel to safe areas. Avoid contact with skin, eyes and inhalation of dusts. Use personal protection recommended in Section 8.

For emergency responders Wear respiratory protection. Wear proper personal protective equipment (gloves and goggles). Wear appropriate outer garment to protect clothing.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, surface drainage systems and poorly ventilated areas.

Methods and material for containment and cleaning up

Methods for containment Avoid creating dust. Safely stop source of spill. Restrict non-essential personnel from area. All personnel involved in spill cleanup should avoid skin and eye contact by wearing appropriate personal protection equipment. Do not breathe dust.

Methods for cleaning up Avoid dust formation. Clean up dusts with high efficiency particulate air (HEPA) filtered vacuum equipment or by wet cleaning.

Prevention of secondary hazards Clean contaminated objects and area thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protection recommended in Section 8. Avoid generation of dust. Be familiar with the requirements set forth in the OSHA Lead Standard, 29 CGR 1910.1025.

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lead 7439-92-1	TWA: 0.15 mg/m³Pb	TWA: 0.05 mg/m³Pb	IDLH: 100mg/m³Pb TWA: 0.050 mg/m³Pb
Antimony 7440-36-0	TWA: 0.5 mg/m³Sb	TWA: 0.5 mg/m³Sb	IDLH: 0.50 mg/m³Sb TWA: 0.5 mg/m³Sb
Tin 7440-31-5	TWA: 2.0 mg/m³Sn	TWA: 2.0 mg/m³Sn	IDLH: 100 mg/m³Sn TWA: 2.0 mg/m³Sn

Appropriate engineering controls

Engineering Controls Use contained process enclosures, local exhaust ventilation or other engineering controls to maintain aerosols below the exposure limit. If user operations generate dust, fume or mist use ventilation to keep exposure to airborne contaminates below the exposure limit.

Individual protection measures, such as personal protective equipment

Eye/face protection Use safety glasses with side shields or chemical goggles.

Skin and body protection Protective clothing is required if exposure exceeds the PEL or TLV or where possibility of skin or eye irritation exists. Full body cotton or disposable coveralls and disposable gloves should be worn during use and handling. Clothing should be left at work site and be properly disposed of or laundered after use. The wash water should be disposed of in accordance with local, state and federal regulations. Personal clothing should be protected from contamination.

Respiratory protection If engineering controls cannot maintain airborne concentrations below exposure limits, use appropriate, approved respiratory protection (a 42 CFR 84 class N, R, or P-100 particulate filter cartridge). When exposure levels are unknown, a self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask should be worn. Utilization of respiratory equipment should be in accordance with 29 CFR 1910.1025 and 29 CFR 1910.134.

General Hygiene Considerations	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear disposable gloves and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Gray with bluish or silvery cast depending on alloy
Color	Odorless

Property	**Values**	**Remarks *Method**
pH	Not available	
Melting point/freezing point	>600°C	
Boiling point/boiling range	>600°C	
Flash Point	Not applicable (high-melting point solid)	
Evaporation rate	Not applicable (high-melting point solid)	
Flammability (solid, gas)	Not combustible	
Flammability Limit in Air		
Upper flammability limit:	Not combustible	
Lower flammability limit:	Not combustible	
Vapor pressure	Negligible	
Vapor density	Not applicable (high-melting point solid)	
Specific Gravity	9.96	
Water solubility	70.2 mg/L at 20°C	
Solubility in other solvents	Lead compounds, soluble in 0.07 M hydrochloric acid	
Partition coefficient	Not applicable (inorganic)	
Auto ignition temperature	Not combustible	
Decomposition temperature	>600°C	
Kinematic viscosity	Not applicable (solid)	
Dynamic viscosity	Not applicable (solid)	
Explosive properties	Not considered to be explosive	
Oxidizing properties	Not considered to be oxidizing	

Other information

Softening point	Not available
Molecular weight	Not available
VOC Content (%)	Not available
Bulk density	Not available

10. STABILITY AND REACTIVITY

Reactivity

Stable under normal conditions.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

None under normal processing.
Hazardous polymerization does not occur.

Conditions to avoid

Avoid excessive exposure to heat.

Incompatible materials

Strong oxidizing agents.

Hazardous Decomposition Products

Lead oxide fumes.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Hazardous exposure to lead compounds can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume.

Inhalation	Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs
Eye contact	Lead compounds may cause eye irritation
Skin contact	Lead compounds are poorly absorbed through the skin
Ingestion	Acute ingestion of lead compounds may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead to rapidly systemic toxicity and must be treated by a physician.
Component information	Lead is slowly absorbed by ingestion and inhalation and poorly absorbed through the skin. If absorbed, lead will accumulate in the body with low rates of excretion, leading to long-term build up. Part of risk management is to take blood samples from workers for analysis to ensure that exposure levels are acceptable.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Lead 7439-92-1	56 mg/m³ Rat	Not available	100 mg/m³Rat
Antimony 7440-36-0	7500mg Sb/kg Rat	Not available	720 mg Cu/m³ Rat
Tin 7440-31-5	2207mg Sn/kg Rat	Not available	Not available

Information on toxicological effects

Symptoms Not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Lead metal granules or dust: May cause skin irritation by mechanical action. Lead metal foil, shot or sheets: Not likely to cause skin irritation.

Serious eye damage/eye irritation

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 or inorganic lead may not develop quickly. Symptoms may include metallic taste, chest pain, decreased physical fitness, fatigue, sleep disturbance, headache, and 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 will 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.

Carcinogenic effects

Epidemiology studies or workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans.

Chemical Name	ACGIH	IARC	NTP	OSHA
Lead 7439-92-1	A3	2B	Reasonably Anticipated	Category 1B
Antimony 7440-36-0	A2	2B	Not Listed	Category 2
Tin 7440-31-5	Not Listed	Not Listed	Not Listed	Not Listed

Reproductive toxicity

Exposure to high levels of lead may cause adverse effects on male and female, including adverse effects on sperm quality. Prenatal exposure to lead and its compounds is also associated with adverse effects on fetal development.

STOT – single exposure Lead has been found to be of relatively low acute toxicity by ingestion, in contact with skin, and by inhalation, with no evidence of any local or systemic toxicity from such exposures.

STOT – repeated exposure Lead is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.

Chronic toxicity Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility. Lead is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects. May cause cancer. Contains a known or suspected reproductive toxin. May cause adverse kidney effects.

Target Organ Effects Lead is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.

Aspiration hazard Not available.

Numerical measures of toxicity – Product Information

The following values are calculated based on chapter 3.1 of the GHS document.

Inhalation LC50 850 mg/m³ Rat

12. ECOLOGICAL INFORMATION

Environmental Fate 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.

Environmental Toxicity Soluble lead compounds are listed as a marine pollution according to DOT.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacean
Lead 7439-92-1	0.072-0.388: 72h Pseudokirchneriella subcapitatia, Chlorella kessierii mg/L ErC50 (pH 5.5-6.5)	0.298: 96h Pimephales promelas mg/L LC50 static 0.041-1.810: 96h Pimephales promelas, Oncorhynchus mykiss		0.074-0.656: 48h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH 5.5-6.5)

	0.026-0.080: 72h Pseudokirchneriella subcapitatia, Chlorella kessierii mg/L ErC50 (pH >6.5-7.5) 0.021-0.050: 72h Pseudokirchneriella subcapitatia, Chlorella kessierii mg/L ErC50 (pH <7.5-8.5)	mg/L LC50 (pH 5.5-6.5)0.052-3.60: 96h Pimephales promelas, Oncorhynchus mykiss mg/L LC50 (pH >6.5-7.5) 0.114-3.25: 96h Pimephales promelas, Oncorhynchus mykiss mg/L LC50 (pH >7.5-8.5) 56000: 96h Gambusia affinis mg/L LC50 static		0.029-1.18: 48h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH >6.5-7.5) 0.026-3.12: 48h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH >7.5-8.5)
Antimony 7440-36-0	None listed	Cyprinodont variegates: LC50 = 6.2-8.3 mg/L/96h	None listed	None listed
Tin 7440-31-5	None listed	None listed	None listed	None listed

Bioaccumulation

While lead metal and its compounds are generally insoluble, its processing or extended exposure in aquatic and terrestrial environments may lead to the release of lead in bioavailable forms. Lead compounds are not particularly mobile in the aquatic environments, but can be toxic for organisms, especially fish, at low concentrations. Water hardness, pH and dissolved organic carbon content are factors which regulate the degree of toxicity. In soil, lead compounds are generally not very bioavailable.

Mobility

Lead and lead compounds will partially settle out due to their fairly low solubility and partially dissolve. In soil, lead and lead compounds are generally not very mobile or bioavailable, as they can be strongly absorbed on soil particles, increasingly over time. It also forms complexes with organic matter and clay minerals that limit its mobility. When released into the soil, this material is not expected to leach into groundwater.

Other adverse effects Not available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note: This product is not regulated for domestic transport by land, air or rail.

- Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated.
- Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

DOT

Proper shipping name	Not applicable
Hazard Class	Not applicable
Packing Group	Not applicable
Reportable Quantity (RQ)	Not applicable
Marine pollutant	Soluble lead compounds are listed as a marine pollutant according to DOT.
Emergency Response Guide	Not applicable

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA – United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS – European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS – Japan Existing and New Chemical Substances

IECSC – China Inventory of Existing Chemical Substances

KECL – Korean Existing and Evaluated Chemical Substances

PICCS – Philippines Inventory of Chemicals and Chemical Substances

AICS – Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS No.	Weight - %	SARA 313 – Threshold Values %
Lead	7439-92-1	90 – 99.99	0.1
Antimony	7440-36-0	0 – 9	1.0
Tin	7440-31-5	0 – 2	Not Listed

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA – Reportable Quantities	CWA – Toxic Pollutants	CWA – Priority Pollutants	CWA – Hazardous Substances
Lead 7439-92-1	10 lb.	X	X	X
Antimony 7440-36-0	5000 lb.	X	X	X
Tin 7440-31-5	-	-	-	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

US State Regulations

California Proposition 65

This product contains a chemical known to the state of California to cause birth defects or other reproductive harm.

Chemical Name	California Proposition 65
Lead – 7439-92-1	Cancer
Antimony – 7440-36-0	Cancer
Tin – 7440-31-5	Not Listed

US State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Lead – 7439-92-1	X	X	X
Antimony – 7440-36-0	X	X	X
Tin – 7440-31-5	X	-	X

US EPA Label Information

EPA Pesticide Registration Number Not available

16. OTHER INFORMATION

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Revision Date

Revision Note None

Disclaimer

This 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 guidance for safe handling, use, Processing, storage, transportation, disposal and release and is not to be considered a warranty or quality Specification. The information materials or in any process, unless specified in the text.