



SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Lead shot
Synonyms	Reload Lead, Magnum Shot, Hard shot, Chill Shot, Copper plated shot, Buck shot, Free flow shot (dust), Ballast shot, Radiation shot
Recommended uses	Reload shells (ammunition), ballast, radiation shielding
Uses advised against	Jewelry, toys

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

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



Appearance Gray with bluish or silvery cast depending on physical alloy
 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
 Very toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Material	% by Wt.	CAS #	OSHA EXPOSURE LIMIT
Lead	91 – 99.99	7439-92-1	0.05 mg/m ³
Antimony	0.5 – 6.5	7440-36-0	0.50 mg/m ³
Arsenic	0.1 – 2.0	7440-38-2	0.01 mg/m ³
Copper	0.1 – 1.0	7440-50-8	0.10 mg/m ³

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 and antimony 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 CFR 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 Shot (As Lead) 7439-92-1	TWA: 0.15 mg/m ³ Pb	TWA: 0.05 mg/m ³ Pb	IDLH: 100mg/m ³ Pb TWA: 0.050 g/m ³ Pb
Antimony 7440-36-0	TWA: 0.5 mg/m ³ Sb	TWA: 0.5 mg/m ³ Sb	IDLH: 50mg/m ³ Sb TWA: 0.5mg/m ³ Sb
Arsenic 7440-38-2	TWA: 0.01 mg/m ³ ,A1	TWA: 0.01 mg/m ³ As	IDLH: 5mg/m ³ As TWA: 0.002mg/m ³ As 15minute ceiling
Copper 7440-50-8	TWA: 1.0 mg/m ³ Cu	TWA: 1.0 mg/m ³ Cu	IDLH: 2000 mg/m ³ Cu TWA: 1.0 mg/m ³ Cu

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 contaminants 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
Odor	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	450mg Pb/kg	Not available	100mg Pb/m ³
Antimony 7440-36- 0	7g Sb/kg Rat	Not available	Not available
Arsenic 7440-38- 2	763mg As/m ³ Rat	Not available	5.2 mg As/m ³ Cat

Copper 7440-50-8	1000 mg Cu/kg Rat	Not available	>2000 mg Cu/m ³ Mammal
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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 flulike 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
Arsenic 7440-38-2	A1	1	K	Category 1B
Copper 7440-50-8	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.

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

Inhalation LC50 None available

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.
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Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacean
Lead 7439-92- 1	0.072-0.388: 72h Pseudokirchneriella subcapitata, Chlorella kessierii mg/L ErC50 (pH 5.5-6.5) 0.026-0.080:72h Pseudokirchneriella subcapitata, Chlorella kessierii mg/L ErC50 (pH >6.5-7.5) 0.021-0.050: 72h	0.298: 96h Pimephales promelas mg/L LC50 static 0.041-1.810: 96h Pimephales promelas, Oncorhynchus mykiss 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		0.074-0.656: 48h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH 5.5- 6.5) 0.029-1.18: 48h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH >6.5-7.5) 0.026-3.12: 48h
	Pseudokirchneriella subcapitata, Chlorella kessierii mg/L ErC50 (pH 7.5-8.5)	Pimephales promelas, Oncorhynchus mykiss mg/L LC50(pH >7.5-8.5) 56000: 96h Gambusia affinis mg/L LC50 static		Daphnia magna, Ceriodaphnia dubia mg/L LC50(pH >7.5-8.5)
Antimony 7440-36-0	Not Listed	Cyprinodont variegates: LC50 = 6.2-8.3 mg/L/96h	Not Listed	Not Listed
Arsenic 7440- 38-2	Not Listed	Pimephales promelas (flathead minnow) LC50= 9.9mg/l – 96.0h	Daphnia magna (water flea) EC50= 3.8mg/l – 48h	Not Listed
Copper 7440- 50-8	Pseudokirchneriella subcapitata: EC50 = .0426 - .0535 mg/L/72h	Pimephales promelas: LC50 = .0068 - .0156 mg/L/96h. Pimephales promelas (static): LC50 = .3mg/L/96h	None listed	Daphnia magna: EC50 = .03 mg/L/48h

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

Reportable quantity (RQ)

Not applicable

Packing group

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	<i>United States Toxic Substances Control Act Section 8(b) Inventory</i>
DSL/NDSL	<i>Canadian Domestic Substances List/Non-Domestic Substances List</i>
EINECS/ELINCS	<i>European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances</i>
ENCS	<i>Japan Existing and New Chemical Substances</i>
IECSC	<i>China Inventory of Existing Chemical Substances</i>
KECL	<i>Korean Existing and Evaluated Chemical Substances</i>
PICCS	<i>Philippines Inventory of Chemicals and Chemical Substances</i>
AICS	<i>Australian Inventory of Chemical Substances</i>

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	91-99.99	0.1
Antimony	7440-36-0	0.5-6.5	1.0
Arsenic	7440-38-2	0.1-2.0	0.1
Copper	7440-50-8	0.1 – 1.0	1.0

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
Arsenic 7440-38-2	1 lb.	X	X	X
Copper 7440-50-8	1 lb.	-	X	X

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
Arsenic – 7440-38-2	Developmental
Copper – 7440-50-8	Not Listed

US State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Lead – 7439-92-1	x	x	x	-	x
Antimony – 7440-36-0	x	x	x	-	x
Arsenic – 7440-38-2	x	x	x	-	x
Copper – 7440-50-8	x	x	x	-	x

US EPA Label Information

EPA Pesticide Registration Number Not available.

16. OTHER INFORMATION

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.

Version 2
Last revisión October 1st, 2015