Plasmaterials, Inc.
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SAFETY DATA SHEET

Section 1- IDENTIFICATION

COMPOSITION	PRODUCT NAME	
Pb	**Lead**	
SUPPLIER: **Plasmaterials, Inc.** **2268 Research Drive** **Livermore, CA 94550** **Ph: 925-447-4030**	RECOMMENDED USE: **Laboratory Chemicals** **Scientific Research**	EMERGENCY TELEPHONE NUMBERS **US: 001-800-424-9300** **Europe: 001-703-527-3887**

Section 2- HAZARD(S) IDENTIFICATION

HEALTH HAZARDS: **-Acute Toxicity (Oral):** Category 4 (H302) **-Acute Toxicity (Inhalation):** Category 4 (H332) **-Carcinogenicity:** Category 2 (H351) **-Reproductive Toxicity (Fertility, the unborn child):** Category 1A (H360) **-Specific Target Organ Toxicity, Repeated Exposure:** Category 2 (H373)	**ENVIRONMENTAL HAZARDS:** **-Hazardous to the aquatic environment, acute hazard:** Category 1 (H400) **-Hazardous to the aquatic environment, long-term hazard:** Category 1 (H410)
Physical Hazards: Not Classified	**OSHA Defined Hazards:** Not Classified

LABEL ELEMENTS: Signal Word: Danger

HAZARD STATEMENTS

-H302: Harmful if swallowed.
-H332: Harmful if inhaled.
-H351: Suspected of causing cancer.
-H360: May damage fertility or the unborn child.
-H373: May cause damage to organs through prolonged or repeated exposure.
-H400: Very toxic to aquatic life
-H410: Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

-P201: Obtain special instructions before use
-P202: Do not handle until all safety precautions have been read and understood
-P260: Do not breathe dust/fume/gas/mist/vapors/spray.
-P261: Avoid breathing dust.
-P264: Wash thoroughly after handling.
-P270: Do not eat, drink, or smoke when using this product.
-P271: Use only outdoors or in a well-ventilated area
-P273: Avoid release to the environment
-P280: Wear protective gloves/protective clothing/eye protection/face protection

-P301+P312: If swallowed: Call a poison center/doctor if you feel unwell.
-P304+P340: If inhaled: Remove person to fresh air and keep comfortable for breathing.
-P308+P313: If exposed or concerned: Get medical advice/attention.
-P312: Call a poison center/doctor if you feel unwell.
-P330: Rinse mouth.
-P391: Collect spillage
-P405: Store locked up.
-P501: Dispose of contents/container in accordance with local/regional/national/international regulations

Hazards not otherwise classified (HNOC):

-None identified.

Section 3- COMPOSITION/INFORMATION ON INGREDIANTS

COMPONENT	CAS-No	Molecular Weight
Lead	**7439-92-1**	**207.2 g/mol**

Section 4- FIRST AID MEASURES

GENERAL ADVICE: If exposed or concerned: get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

INHALATION: Remove victim from exposure to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Call a poison control center or doctor/physician if you feel unwell.

SKIN CONTACT: Wash off with soap and plenty of water. Get medical attention if irritation develops and/or persists.

EYE CONTACT: Do not rub eyes. Flush eyes with plenty of water, lifting upper and lower lids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and/or persists.

INGESTION: Rinse mouth thoroughly. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Get medical advice/attention if you feel unwell.

MOST IMPORTANT SYMPTOMS/EFFECTS: Abdominal pain. Prolonged exposure may cause chronic effects.

NOTES TO PHYSICIAN: Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media:	**Unsuitable Extinguishing Media:**
Water Fog, Foam, Dry Chemical Powder, Carbon Dioxide (CO2)	Do not use water jet as an extinguisher, as this will spread the fire.

Specific Hazards Arising from the Chemical:

During fire, gases hazardous to health may be formed.

Protective Equipment & Precautions for Firefighters:

As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

Firefighting Instructions/Specific Methods:

Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to cool unopened containers.

General Fire Hazards:

No unusual fire or explosion hazards noted.

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see Section 8 of SDS.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

Methods for Containment & Clean Up: Avoid dispersal of the dust in the air (i.e., clearing dust surfaces with compressed air). This material is immiscible with water and will spread on the water surface. Stop the flow of material if this is without risk. Prevent entry into waterways, sewer, basements, or confined areas.

-Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand, or earth and place into containers. Following product recovery, flush area with water.

-Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g., cloth, fleece). Clean surface thoroughly to remove residual contamination.

-Never return spills to original containers for re-use.

-For waste disposal, see Section 13 of SDS.

Section 7- HANDLING AND STORAGE

Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Avoid breathing dust. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink, or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protection equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Storage: Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of SDS)

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Component	CAS-No.	Value	Control Parameters	Basis
Lead	7439-92-1	TWA	0.05 mg/m3	US. ACGIH Threshold Limit Values (TLV)
		TWA	0.05 mg/m3	US. NIOSH Pocket Guide to Chemical Hazards Materials
		TWA	0.05 mg/m3	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
		PEL	0.05 mg/m3 (dust and fume)	US California Code of Regulations, Title 8, Section 5155. Airborne Contaminants Material
		TWA	0.03 mg/m3 (dust and fume)	US California Code of Regulations, Title 8, Section 5155. Airborne Contaminants Material

Biological Limit Values:

Component	CAS-No.	Value	Determinant	Specimen	Basis
Lead	7439-92-1	300 µg/l	Lead	Blood	US ACGIH Biological Exposure Indices (BEI)
	Remarks	See the source document for sampling details.			

Engineering Measures: Follow standard monitoring procedures. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Keep away from food and drink. Wash thoroughly after handling and before eating, drinking and/or smoking. Wash hands before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection

tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
Skin and Body Protection: Handle with chemical resistant gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Wear appropriate chemical resistant protective clothing. Use of an impervious apron is recommended. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. Where protection from nuisance levels of dusts is desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Thermal Hazards: Wear appropriate thermal protective clothing, when necessary.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Appearance: No information available
Odor: No information available
Odor Threshold: No information available
pH: No information available
Melting Point/Range: 327.4°C (621.32°F)
Boiling Point/Range: 1740°C (3164°F)
Flash Point: No information available
Evaporation Rate: No information available
Flammability (solid,gas): No information available
Flammability or Exposure Limits:
Upper: No information available
Lower: No information available
Vapor Pressure: No information available
Vapor Density: No information available
Relative Density: No information available
Solubility: Insoluble
Partition coefficient; n-octanol/water: No information available
Auto Ignition Temperature: No information available
Decomposition Temperature: No information available
Viscosity: No information available
Density: 11.34 g/cm³ estimated
Specific Gravity: 11.34 at 20°C
Explosive Properties: No data available
Oxidizing Properties: No data available

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: Stable and non-reactive under normal conditions of use, storage and transport.

Stability: Stable under normal conditions.

Conditions to Avoid: Contact with incompatible materials

Incompatible Materials: Acids, strong oxidizing agents

Hazardous Decomposition Products: No information available

Hazardous Reactions: No information available

Section 11- TOXICOLOGICAL INFORMATION

Information on likely Routes of Exposure:

Inhalation: Harmful if inhaled.
Skin Contact: No adverse effects due to skin contact are expected
Eye Contact: Direct contact with eyes may cause temporary irritation
Ingestion: Harmful if swallowed

Symptoms Related to the Physical, Chemical & Toxicological Characteristics: Abdominal Pain

Information on Toxicological Effects:

Acute Toxicity: Harmful if inhaled. Harmful if swallowed.
Skin Corrosion/Irritation: Prolonged skin contact may cause temporary irritation
Serious Eye Damage/Eye Irritation: Direct eye contact may cause temporary irritation
Respiratory or Skin Sensitization: No information available
Carcinogenicity: Suspected of causing cancer
-IARC Monographs Overall Evaluation of Carcinogenicity: 2B Possibly carcinogenic to humans
-OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not regulated
-US National Toxicology Program (NTP) Report on Carcinogens: Reasonably anticipated to be a human carcinogen
Germ Cell Mutagenicity: No information available
Reproductive Toxicity: May damage fertility. May damage the unborn child.
Development Toxicity: No information available
Specific Target Organ Toxicity – single exposure: No information available
Specific Target Organ Toxicity – repeated exposure: May cause damage to organs through prolonged or repeated exposure.
Aspiration Hazard: No information available
Chronic Effects: May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

Toxicity: Very toxic to aquatic life with long lasting effects.
Toxicity to fish: LC50-Rainbow trout, Donaldson trout (Oncorhynchus mykiss) – 1.17 mg/l – 96 h
Persistence and Degradability: No information available
Bioaccumulation/Accumulation: No information available
Mobility in Soil: No information available
Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Other Adverse Effects: No information available

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Collect and reclaim or dispose in sealed containers at a licensed waste disposal site. Dispose of empty containers and contaminated packaging as unused product. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways, or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14- TRANSPORT INFORMATION

DOT: Not regulated as dangerous goods

IATA:

UN-No: UN2291
Proper Shipping Name: Lead compound, soluble, n.o.s. (Lead (metal))
Hazard Class: 6.1 (PGIII)
Packing Group: III
Environmental Hazards: No
ERG Code: 6L
Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
Passenger & Cargo Aircraft: Allowed with restrictions
Cargo Aircraft Only: Allowed with restrictions

IMDG:

UN-No: UN2291
Proper Shipping Name: Lead compound, soluble, n.o.s. (Lead (metal)), Marine Pollutant
Hazard Class: 6.1 (PGIII)
Packing Group: III
Environmental Hazards (Marine Pollutant): Yes
EmS: F-A, S-A
Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
IMDG Regulated Marine Pollutant

Section 15- REGULATORY INFORMATION

US Federal Regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated
CERCLA Hazardous Substance List (40 CFR 302.4): Listed – Lead (metal) (CAS No.7439-92-1)
U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Reproductive toxicity, central nervous system, kidney, blood, and acute toxicity
SARA Hazard Categories:

Immediate Hazard: Yes
Delayed Hazard: Yes
Fire Hazard: No
Pressure Hazard: No
Reactive Hazard: No

SARA 302 Extremely Hazardous Substance: Not Listed
SARA 304 Emergency Release Notification: Not Regulated
SARA 311/312 Hazardous Chemical: Yes
SARA 313 (TRI Reporting):

Chemical Name	CAS-No	% by Weight
Lead (metal)	7439-92-1	90-100

Safe Drinking Water Act (SWDA): 0 mg/l; 0.015 mg/l
Clean Water Act (CWA) Section 112(r) (40 CFR 68.130): Priority pollutant; Toxic pollutant
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Lead (metal) (CAS No. 7439-92-1)
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated
US California Proposition 65: WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.
US California Controlled Substances. CA Dept of Justice (California Health & Safety Code Section 11100): Not Listed
US California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3 subd. (a)): Lead (metal) (CAS No. 7439-92-1)
US California Proposition 65 – CRT: Listed date

Component	CAS-No	Carcinogenic Substance	Developmental Toxin	Female Reproductive Toxin	Male Reproductive Toxin
Lead (metal)	7439-92-1	October 1, 1992	February 27, 1987	February 27, 1987	February 27, 1987

US Illinois Right-To-Know: Lead (metal) CAS No. 7439-92-1
US Massachusetts Right-To-Know: Lead (metal) CAS No. 7439-92-1
US New Jersey Right-To-Know: Lead (metal) CAS No. 7439-92-1
US Pennsylvania Right-To-Know: Lead (metal) CAS No. 7439-92-1
US Rhode Island Right-To-Know: Lead (metal) CAS No. 7439-92-1.

Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

The information in this SDS was obtained from sources, which we believe are reliable. However, the information is provided without any representation or warranty, expressed or implied, regarding the accuracy or correctness.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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