

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Lead, Enriched Lead
Chemical Formula	Pb
Molecular Weight	207.19 amu
CAS No.	7439-92-1
Supplier Address*	ISOFLEX USA P.O. Box 29475 San Francisco, CA 94129 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	+1 415-440-4433 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview:

Harmful.

Harmful by inhalation, in contact with skin and if swallowed.

Target organ(s): Blood. Kidneys. Nerves. Reproductive hazard.

For additional information on toxicity, please refer to Section 10.

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 1 Flammability = 0 Reactivity = 0



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 1 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name: Lead
CAS No.: 7439-92-1
Chemical Formula: Pb
Molecular Weight: 207.19 amu

4. FIRST AID MEASURES

Oral Exposure If swallowed, wash out mouth with water, provided person is conscious. Call a physician.

Inhalation Exposure If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Dermal Exposure In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

5. FIREFIGHTING MEASURES

Flash Point N/A

Autoignition Temperature N/A

Flammability N/A

Suitable Extinguishing Media Use extinguishing media appropriate to surrounding fire conditions.

Firefighting

Protective Equipment Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s) Emits toxic fumes under fire conditions.

Exposure Hazard(s) Material: Harmful solid.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

Environmental Precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for Cleaning Up Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

<i>Handling</i>	User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
<i>Storage</i>	Keep tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<i>Engineering Controls</i>	Safety shower and eye bath. Mechanical exhaust required.
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Personal Protective Equipment

<i>Respiratory</i>	Wear government-approved respirator in non-ventilated areas and/or for exposure above the TLV or PEL.
<i>Hand</i>	Compatible chemical-resistant gloves.
<i>Eye</i>	Chemical safety goggles.
<i>General Hygiene Measures</i>	Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

<i>Form</i>	Solid
<i>Color</i>	Gray

Safety Data

Molecular Weight:	207.19 amu	pH:	N/A
BP/BP Range:	N/A	MP/MP Range:	327.5 °C
Freezing Point:	N/A	Vapor Pressure:	N/A
Vapor Density:	N/A	Saturated Vapor Concentration:	N/A
Bulk Density:	N/A	Odor Threshold:	N/A
Volatile %:	N/A	VOC Content:	N/A
Water Content:	N/A	Solvent Content:	N/A
Evaporation Rate:	N/A	Viscosity:	N/A
Surface Tension:	N/A	Partition Coefficient:	N/A
Decomposition Temperature:	N/A	Flash Point:	N/A
Explosion Limits:	N/A	Flammability:	N/A
Autoignition Temperature:	N/A	Refractive Index:	N/A
Optical Rotation:	N/A	Miscellaneous Data:	N/A

10. STABILITY AND REACTIVITY

<i>Stability</i>	Stable under recommended storage conditions
<i>Reactivity</i>	No data available
<i>Materials to Avoid</i>	Strong acids
<i>Hazardous Decomposition Products</i>	Nature of decomposition products not known

11. TOXICOLOGICAL INFORMATION

<i>Route of Exposure</i>	Multiple Routes: Harmful if inhaled or swallowed. May cause irritation.
<i>Target Organ(s) or System(s)</i>	Nerves, blood, kidneys, female reproductive system, male reproductive system
<i>Signs and Symptoms of Exposure</i>	Anemia
<i>Conditions Aggravated by Exposure</i>	May cause nervous system disturbances

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD: Result: May cause reproductive disorders.

Germ Cell Mutagenicity Cytogenetic analysis (rat)

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

<i>IARC</i>	2B - Group 2B: Possibly carcinogenic to humans (Lead)
<i>NTP</i>	Reasonably anticipated to be a human carcinogen (Lead) Reasonably anticipated to be a human carcinogen.
<i>OSHA</i>	1910.1025 (Lead)

Reproductive Toxicity

Suspected human reproductive toxicant

Reproductive toxicity - Rat - Inhalation

Effects on Newborn: Biochemical and metabolic

Reproductive toxicity - Rat - Oral

Effects on Newborn: Behavioral

Reproductive toxicity - Mouse - Oral

Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per *corpora lutea*)

Developmental Toxicity - Rat - Inhalation

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus)

Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow)

Developmental Toxicity - Rat - Oral

Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow)

Effects on Newborn: Growth statistics (e.g., reduced weight gain)

Developmental Toxicity - Rat - Oral

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus)

Effects on Embryo or Fetus: Fetal death

Developmental Toxicity - Mouse - Oral

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus)

Effects on Embryo or Fetus: Fetal death

Specific Target Organ

No data available

Toxicity / Single Exposure

Specific Target Organ

May cause damage to organs through prolonged or repeated exposure

Toxicity / Repeated Exposure

Aspiration Hazard

No data available

Additional Information

RTECS: OF7525000

12. ECOLOGICAL INFORMATION

Toxicity

<i>Toxicity to Fish</i>	Mortality LOEC - <i>Oncorhynchus mykiss</i> (rainbow trout) - 1.19 mg/l - 96.0 h LC50 - <i>Micropterus dolomieu</i> - 2.2 mg/l - 96.0 h Mortality NOEC - <i>Salvelinus fontinalis</i> - 1.7 mg/l - 10.0 d
<i>Toxicity to Daphnia and other Aquatic Invertebrates</i>	Mortality LOEC - <i>Daphnia</i> - 0.17 mg/l - 24 h Mortality NOEC - <i>Daphnia</i> - 0.099 mg/l - 24 h
<i>Toxicity to Algae</i>	Mortality EC50 - <i>Skeletonema costatum</i> - 7.94 mg/l - 10 d
<i>Persistence and Degradability</i>	No data available
<i>Bioaccumulative Potential</i>	Bioaccumulation <i>Oncorhynchus kisutch</i> - 2 Weeks - 150 µg/l
<i>Bioconcentration Factor (BCF)</i>	
<i>Mobility in Soil</i>	No data available
<i>Results of PBT and vPvB Assessment</i>	PBT/vPvB assessment not available, as chemical safety assessment not required/not conducted
<i>Other Adverse Effects</i>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life, with long-lasting effects.

13. DISPOSAL CONSIDERATIONS

<i>Product</i>	Material in the elemental state should be recovered for reuse or recycling. Observe all federal, state, and local environmental regulations. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
<i>Contaminated Packaging</i>	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	None
Non-Hazardous for Transport	This substance is considered to be non-hazardous for transport.

IATA

<i>Non-Hazardous for Air Transport</i>	Non-hazardous for air transport
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15. REGULATORY INFORMATION

REACH Number

A registration number is not available for this substance, as the substance or its uses are exempted from registration, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.

SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	The following components are subject to reporting levels established by SARA Title III, Section 313: <i>Lead / CAS No. 7439-92-1 / Revision Date 1994-04-01</i>
SARA 311/312 Hazards	Acute Health Hazard, Chronic Health Hazard <i>Lead / CAS No. 7439-92-1 / Revision Date 1994-04-01</i>
Massachusetts Right to Know Components	<i>Lead / CAS No. 7439-92-1 / Revision Date 1994-04-01</i>
Pennsylvania Right to Know Components	<i>Lead / CAS No. 7439-92-1 / Revision Date 1994-04-01</i>
New Jersey Right to Know Components	<i>Lead / CAS No. 7439-92-1 / Revision Date 1994-04-01</i>
California Prop. 65 Components	WARNING! This product contains a chemical known to the State of California to cause cancer: <i>Lead / CAS No. 7439-92-1 / Revision Date 1994-04-01</i> WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm: <i>Lead / CAS No. 7439-92-1 / Revision Date 1994-04-01</i>

16. OTHER INFORMATION

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PO Box 29475
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Prepared By Lori McKannay Matthews
Revision Note Required format update

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
BOD5	Biochemical Oxygen Demand
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
COD	Chemical Oxygen Demand
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)

DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
ECL	Korean Existing Chemicals List
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RQ	Reportable Quantity
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
SNUR	Significant New Use Rule (TSCA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

General Disclaimer

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between ISOFLEX USA (or any of its affiliates and subsidiaries) and the purchaser.

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