GHS
SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

MANUFACTURER/SUPPLIER
Exide Technologies
13000 Deerfield Parkway, Bldg. 200
Milton, GA 30004

FOR FURTHER INFORMATION
Primary Contact:
Exide SDS Support (770) 421-3485
Secondary Contact:
Joe Bolea (423) 989-6377
Fred Ganster (610) 921-4052

CHEMICAL/TRADE NAME (as used on label) Red Lead Oxide

PRODUCT ID UN3077

CHEMICAL FAMILY/ CLASSIFICATION Minium, Red Lead

FOR EMERGENCY
CHEMTREC (800) 424-9300
(703) 527-3887 – Collect
24-hour Emergency Response Contact
Ask for Environmental Coordinator

II. HAZARD IDENTIFICATION

Signal Word: Danger

Category:	GHS Codes	Description
Health:	H302	Harmful if swallowed
	H332	Harmful if inhaled
	H360df	May damage fertility or unborn child
	H373	May cause damage to the central nervous system and systems for reproduction organs through prolonged or repeated exposure.
Acute Tox 4		
Repro 1A	P201	Obtain special instructions before use
STOT RE 2	P202	Do not handle until all safety precautions have been read and understood
Aquatic Acute 1	P260	Do not breathe dust/vapors
Acute Chronic 1	P281	Use personal protective equipment as required
	P308+P313	IF exposed or concerned: get medical advice/attention
	H400	Very toxic to aquatic life
	H410	Very toxic to aquatic life with long lasting effects
Handling:	P405	Store locked up
	P501	Dispose of contents/container in accordance with local/regional/national/international regulation.

WARNING: None

Reactivity: strong oxidizers, hydrogen peroxide, and active metals, such a sodium and potassium

III. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	*CAS Number*	*% by Wt.*
Lead Tetroxide	1314-41-6	20-100
Lead Monoxide	1317-36-8	0-70

Note:
Trace amounts of the following elements may be present: Antimony, Arsenic, Bismuth, Cadmium, Calcium, Copper, Nickel, Selenium, Silver, Sulfur, Tellurium, Tin, and Zinc.

IV. FIRST AID MEASURES

Take proper precautions to ensure you own health and safety before attempting to rescue a victim and provide first aid.

Inhalation Remove from exposure, gargle, wash nose and lips; consult physician.

Skin Contact: Wash immediately with brush, with soap and water, flush with plenty of water, contact a physician.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes; consult physician immediately.

Ingestion: Induce vomiting if conscious, wash nose and lips; give a demulcent, consult physician.

V. FIRE FIGHTING MEASURES

Flash Point: Not Applicable

Flammable Limits: Not Applicable

Extinguishing media: CO_2, foam, or dry chemical. **DO NOT use water (H_2O) when molten metal is present.**

Fire Fighting Procedures:

Use full body protective clothing and full-face piece, positive pressure, self-contained breathing apparatus.

Hazardous Combustion Products:

Molten metals produce fume, vapor and/or dust that may be toxic and/or respiratory irritants. This product, or its dust, can react vigorously with strong oxidizing agents.

VI. ACCIDENTAL RELEASE MEASURES

Lead dust or particulate should be vacuumed (using HEPA filter) or wet-swept. Use controls that minimize fugitive emissions. Do not dry sweep nor use compressed air. Place in dry, closed containers for disposal or recycling.

During spill cleanup, residual was waters should be contained and collected for proper disposal. Precautionary measures should be exercised to prevent this substance or associated wash waters from entering waterways.

Response personnel should wear PPE including gloves (rubber or leather), Tyvek coveralls, chemical/safety impact goggles and respiratory equipment as per Section 8.

VII. HANDLING AND STORAGE

Handling:

AVOID SKIN CONTACT. Avoid generating dust. Wear PPE as directed in this document.

Storage:

Store in a cool, dry area where accidental contact with acids, active metals or strong oxidizers is not possible.

VIII. EXPOSURE CONTROLS AND PERSONAL PROTECTION

	Occupational Exposure Limits (mg/m^3)					
Ingredient:	US OSHA	US ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Lead Tetroxide	0.05	0.05	0.05	0.05	0.05	0.15(a,b)
Lead Monoxide	0.05(a)	0.05(a)	0.05(a)	0.05(a)	0.05(a)	0.15(a,b)

NOTES:

(a) as inorganic lead

(b) as inhalable aerosol

Engineering Controls (Ventilation):

Ventilation, as described in the Industrial Ventilation Manual produced by the American Conference of Governmental Industrial Hygienists, shall be provided in areas where exposures are above the permissible exposure limits or threshold limit values specified by OSHA [29CFR1910.1025(e)(1)]or other federal, state, or local regulations.

Hygiene Practices:

Wash hands thoroughly before eating, drinking or smoking.

Respiratory Protection (NIOSH/MSHA approved):

As specified by 29 CFR 1910.1025 (f) of the Federal Occupational Safety and Health Administration Standards for Occupational Exposure to lead. Other local and state regulations may also apply. Where exposure is above the permissible exposure limit or the threshold limit values, the minimum respiratory protection recommended is a negative pressure half-mask respirator with high-efficiency cartridges that are NIOSH/MSHA approved against dust, mist, and fumes having a TWA of 0.05 mg/m^3.

Skin Protection:

Protective gloves should be worn when handling this product.

Eye Protection:

Safety glasses or goggles should be worn when using this product to prevent particles of dust from getting into the eyes. Whenever working with molten metal, a full face shield is recommended.

Other Protection:

Coveralls or other full body clothing shall be worn during product use and properly laundered after use, with the wash water disposed of in accordance with local, state and federal regulations. Hard hat, safety boots and other safety equipment should be worn as appropriate for the industrial environment. Personal clothing and shoes should be protected from contamination with this product.

IX. PHYSICAL AND CHEMICAL PROPERTIES – RED LEAD OXIDE

Boiling Point@760 mm Hg	2700°F	Specific Gravity @ 70°F (H_2O=1)	9.5
Melting Point	1022°F/500C (decomposes)	Vapor Pressure (mm Hg)	10 @ 1085°C (1985°F)
% Solubility in Water	0.0017 g/ml	pH	strong base
Evaporation Rate (Butyl acetate=1)	Not Applicable	Vapor Density (AIR=1)	Not Applicable
		Viscosity	Not applicable
Appearance and Odor	Orange to reddish-brown powder, no apparent odor	% Volatiles by Weight	Not Applicable
Octanol Water Partition Coefficient (K_{ow})	Not Applicable		

X. STABILITY & REACTIVITY DATA

Stability: Stable X
Unstable __

Conditions to Avoid: Temperatures above the melting point are likely to produce heavy metal fume, vapor, and/or dust.

Incompatibilities: (materials to avoid)
Strong oxidizers, hydrogen peroxide and active metals such as sodium and potassium. Reacts violently with hydrogen peroxide and other strong oxidizers to liberate hydrogen gas. Do not heat in the presence of aluminum, sodium metals, or potassium metals. No further concern for mechanical impact.

Hazardous Decomposition Products: Oxides of Lead

Hazardous Polymerization: Will Not Occur

XI. TOXICOLOGICAL DATA

Routes of Entry:
Lead compounds are harmful by inhalation, skin contact, ingestion, and eye contact.

Acute Toxicity:
Inhalation LD_{50}: Elemental Lead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)
Oral LD_{50}: Elemental lead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)

Inhalation:
Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs and can result in both acute and chronic overexposure. Symptoms which may be experienced from the inhalation of lead dust or fume may not develop quickly, therefore there may be no immediate effects from exposure. Increasing amounts can build up in the body and may reach a point where symptoms and disability occur. The effects of exposure to fumes and dusts of inorganic lead may include decreased physical stamina, fatigue, sleep disturbance, headaches, aching bones and muscles, constipation, abdominal pains and decreased appetite. Inhalation of large amounts may lead to seizures, coma or possibly death.

Ingestion:
Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea, and severe cramping. This may lead rapidly to systemic toxicity. .

Skin Contact:
Dust, vapor, and/or fume may cause irritation. Not a dermal sensitizer.

Eye Contact:
Dust, vapor, and/or fume may cause eye irritation.

Synergistic Products:
Lead compounds: Synergistic effects have been noted with heavy metals (arsenic, cadmium, mercury), N-nitroso-N-(hydroxyethyl)ethylamine, N-(4-fluoro-4-biphenyl)acetamide, 2-(nitrosoethylamine)ethanol, and benzo[a]pyrene

Additional Information:
Medical Conditions Generally Aggravated by Exposure:
Lead and its compounds can aggravate some forms of kidney, liver, and neurologic diseases.

Additional Health Data:
All heavy metals, including the hazardous ingredients in this product, are taken into the body primarily by inhalation and

ingestion. Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section VIII. Follow good personal hygiene to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving the work site. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated areas and never taken home nor laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated from children and their environment.

XII. 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: Aquatic Toxicity:

Lead: 48 hr LC_{50} (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion

XIII. DISPOSAL INFORMATION

US

Material should be recycled at a secondary lead smelter. Dispose of toxic substances in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

XIV. TRANSPORT INFORMATION

GROUND: - US-DOT/CAN-TDG/EU-ADR/APEC-ADR:
Environmentally hazardous substance, solid, n.o.s., (contains lead)
UN 3077, 9, PG III
Label: "Class 9"
Reportable Quantity: RQ 1(.454)

AIRCRAFT – ICAO–IATA:
Environmentally hazardous substance, solid, n.o.s., (contains lead)
UN 3077, 9, PG III
Label: "Miscellaneous"
For air shipments, reference IATA Dangerous Goods Regulations Special Provision A97, A158, A179 and Packing Instruction P956.

VESSEL – IMO-IMDG:
Environmentally hazardous substance, solid, n.o.s., (contains lead)
UN 3077, 9, PG III
For shipments by water, reference IMDG Special Provision 274, 335 and Packing Instruction P002 and LP02.

Additional Information:

- Transport requires proper packaging and paperwork, including the Nature and Quantity of goods, per applicable origin/destination/customs points as-shipped.

XV. REGULATORY INFORMATION

United States:

CERCLA (Superfund) and EPCRA:

(a) EPCRA Section 312 Tier Two reporting is required if lead is present in quantities of **10,000 lbs** or more.

(b) **Supplier Notification:** This product contains toxic chemicals that may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. For a manufacturing facility under SIC codes 20 through 39, the following information is provided to enable you to complete the required reports:

Toxic Chemical	CAS Number	Approximate % by Weight
Lead tetroxide	1314-41-6	20-100
Lead monoxide	1317-36-8	0-70

If you distribute this product to other manufacturers in SIC Codes 20 through 39, this information must be provided with the first shipment of each calendar year.

Note: The Section 313 supplier notification requirement does not apply to materials that are "consumer products".

TSCA: Each ingredient chemical listed in Section III of this SDS is also listed on the TSCA Registry.

OSHA: Considered hazardous under Hazard Communication Act (29CFR1910.1200)

RCRA: Lead contaminated material may be regulated as a characteristic hazardous waste EPA hazardous waste number D008. Consult local or state environmental agency and/or federal EPA for guidance.

CAA: Exide Technologies supports preventative actions concerning ozone depletion in the atmosphere due to emissions of CFC's and other ozone depleting chemicals (ODC's), defined by the USEPA as Class I substances. Pursuant to Section 611 of the Clean Air Act Amendments (CAAA) of 1990, finalized on January 19, 1993, Exide established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.

Additional Data:

Refer to the latest revision of the OSHA general Industry Standards, 29 CFR 1910. Information about the hazardous ingredients contained in lead compounds are shown in Subpart Z – Toxic and Hazardous Substances, Inorganic Lead Standard 1910.1025.

NFPA:

Health (blue):	=	2
Flammability (red)	=	0
Reactivity (yellow):	=	1

US State Notifications & Warnings:	**Identification**	**Notifications/Warning**
California	California Proposition 65	"WARNING: This product contains lead, a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm."
		The following chemicals identified to exist in the finished product as distributed into commerce are known to the State of California to cause cancer, birth defects or to cause reproductive harm: 1. Lead tetroxide – CAS No. 1314-41-6 20-100% by weight 2. Lead monoxide – CAS N0. 1317-36-8 0-70% by weight
	Consumer Product Volatile Organic Compound Emissions	This product is not regulated as a consumer product for purposes of CARB/OTC VOC Regulations, as sold for the intended purpose and into the industrial/commercial supply chain.

Country/Organization	**Identification**	**Notifications/Warning**
Canada	All chemical substances in this product are listed on the CEPA DSL/NDSL or are exempt from list requirements.	This product has a WHMIS Classification of D2A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. Refer to the Controlled Products Regulation for product labeling requirements.
	NPRI and Ontario Regulation 127/01	This product contains the following chemicals subject to the reporting requirements of Canada NPRI and/or Ont. Reg. 127/01: Chemical / CAS # / %wt Lead / 7439-92-1 / 71-73
	Toxic Substances List	Lead
EU	European Inventory of Existing Commercial Chemical Substances (EINECS):	All ingredients remaining in the finished product as distributed into commerce are exempt from, or included on, the European Inventory of Existing Commercial Chemical Substances.

XVI. OTHER INFORMATION

DATE ISSUED: September 11, 2013

OTHER INFORMATION:	Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2). Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.
SOURCES OF INFORMATION:	International Agency for Research on Cancer (1987), IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Overall Evaluations of Carcinogenicity: An updating of IARC Monographs Volumes 1-42, Supplement 7, Lyon, France. Ontario Ministry of Labor Regulation 654/86. Regulations Respecting Exposure to Chemical or Biological Agents.

PREPARED BY: ENVIRONMENTAL, SAFETY AND HEALTH DEPARTMENT
EXIDE TECHNOLOGIES
13000 DEERFIELD PKWY., BLDG. 200
MILTON, GA 30004

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