# 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): Dry Battery (No electrolyte added)

PRODUCT ID: N/A

CHEMICAL FAMILY/ CLASSIFICATION: Electric Storage Battery

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** | | |
| **STOT RE 2** | H350 | May cause cancer through ingestion |
| **Carc. 1A (arsenic)** | P201 | Obtain special instructions before use |
| | P202 | Do not handle until all safety precautions have been read and understood |
| **Aquatic Acute 1** | | |
| **Acute Chronic 1** | P260 | Do not breathe dust/vapors |
| | 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, acids

## III. COMPOSITION/INFORMATION ON INGREDIENTS

| *Ingredient* | *CAS Number* | *% by Wt.* |
|---|---|---|
| Inorganic compounds of: | | |
| Lead | 7439-92-1 | 91-93 |
| Antimony | 7440-36-0 | 0.2 |
| Tin | 7440-31-5 | 0.06 |
| Calcium | 7440-70-2 | 0.02 |
| Arsenic | 7440-38-2 | 0.003 |
| Case Material: | | |
| Polypropylene Hard Runner | 9003-07-0 | 6-8 |
| Separator: | N/A | 1-3 |

**Note:**
Inorganic lead and electrolyte (water and sulfuric acid solution) are the primary components of every battery manufactured by Exide Technologies or its subsidiaries. Other ingredients may be present dependent upon battery type. Polypropylene is the principal case material of automotive and commercial batteries.

## 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:** Lead/arsenic compounds: Remove from exposure, gargle, wash nose and lips; consult physician.

**Skin Contact:** Lead/arsenic compounds: Wash immediately with soap and water.

**Eye Contact:** Lead/arsenic compounds: Flush immediately with large amounts of water for at least 15 minutes; consult physician immediately.

**Ingestion:** Lead/arsenic compounds: Consult physician immediately.

## V. FIRE FIGHTING MEASURES

**Flash Point:** Not Applicable

**Flammable Limits:** Not Applicable

**Extinguishing media:** Any extinguishing media may be used.

**Fire Fighting Procedures:**

Wear full body protective clothing and self-contained breathing apparatus with positive pressure and full face piece.

**Hazardous Combustion Products:**

Inorganic lead compound is not a combustible material, nor will it explode under conditions of normal use.

To avoid risk of fire or explosion, keep sparks or other sources of ignition away from batteries and do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Follow manufacturer's instructions for installation and service.

Molten metals produce fume, vapor, and/or dust that may be toxic and/or respiratory irritants.

## VI. ACCIDENTAL RELEASE MEASURES

Material is an article. No health effects are expected related to normal use of this product as sold. If article is recycled, lead dust or particulate should be vacuumed (using HEPA filter) or wet-swept; use controls that minimize fugitive emissions; do NOT used compressed air. Place in dry, closed containers for disposal or recycling.

## VII. HANDLING AND STORAGE

**Handling:**

Batteries should also be stored under roof for protection against adverse weather conditions. Store and handle only in areas with adequate water supply. Avoid damage to containers

**Storage:**

Store batteries under roof in cool, dry, well-ventilated areas that are separated from incompatible materials and from activities that may create flames, spark, or heat.

**Charging:**

There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged.

## 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 |
| Inorganic forms of: | | | | | | |
| Lead | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.15(a) |
| Antimony | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5(b) |
| Tin | 2 | 2 | 2 | 2 | 2 | 2(c) |
| Calcium | N/A | N/A | N/A | N/A | N/A | N/A |
| Arsenic | 0.01 | 0.01 | 0.002 | 0.01 | 0.01 | 0.01(a,d) |

NOTES:

(a) as inhalable aerosol

(b) based on OELs for Austria, Belgium, Denmark, France, Netherlands, Switzerland, UK

(c) based on OEL for Belgium

(d) based on OELs for Belgium and Denmark

N/A not applicable

**Engineering Controls (Ventilation):**

Store and handle in a dry, well-ventilated area. Handle batteries cautiously. Make certain that vent caps are on securely. Avoid contact with internal components. Wear protective clothing when filling or handling batteries.

**Hygiene Practices:**
Wash hands thoroughly before eating, drinking or smoking after handling batteries.

**Respiratory Protection (NIOSH/MSHA approved):**
None required under normal conditions

**Skin Protection:**
Wear rubber or plastic acid-resistant gloves with elbow-length gauntlet when filling batteries

**Eye Protection:**
Use chemical goggles or face shield when filling or handling batteries.

**Other Protection:**
Wear coveralls or full-body covering during use. When filling batteries use acid-resistant apron. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.

## IX. PHYSICAL AND CHEMICAL PROPERTIES – LEAD ALLOY

| | | | |
|---|---|---|---|
| Boiling Point@760 mm Hg | Greater than 2516° F | Specific Gravity @ 70°F ($H_2O$=1) | 9.6 to 11.3 |
| Melting Point | 486 to 680°F | Vapor Pressure (mm Hg) | Not Applicable |
| % Solubility in Water | Negligible | pH | Not Applicable |
| Evaporation Rate (Butyl acetate=1) | Not Applicable | Vapor Density (AIR=1) | Not Applicable |
| | | Viscosity | Not Applicable |
| Appearance and Odor | Bluish gray metal; no apparent odor | % Volatiles by Volume @70°F | Not Applicable |
| Octanol Water Partition Coefficient ($K_{ow}$) | Not Applicable | | |

## X. STABILITY & REACTIVITY DATA

**Stability:** Stable X
Unstable ___

**Conditions to Avoid:** Prolonged overcharge at high current; sources of ignition; water damaged

**Incompatibilities:** (materials to avoid)
Lead compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents. No concern for mechanical impact.

**Hazardous Decomposition Products:**
Lead compounds: Temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Hazardous Polymerization:** Will Not Occur

## XI. TOXICOLOGICAL DATA

**Routes of Entry:**
Lead/arsenic compounds: Hazardous exposure can occur only when product is heated above the melting point, oxidized or otherwise processed or damaged to create dust, vapor, or fume.

**Acute Toxicity:**
*Inhalation $LD_{50}$:* Elemental Lead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)
Elemental arsenic: No data
*Oral $LD_{50}$:* Elemental lead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)
Elemental arsenic: $LD_{50}$ mouse: 145 mg/kg

**Inhalation:**
Lead/arsenic compounds: Inhalation of dust or fumes may cause irritation of upper respiratory tract and lungs.

**Ingestion:**
Lead/arsenic compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea, and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

**Skin Contact:**
Lead compounds: Not absorbed through the skin and is not a dermal sensitizer.
Arsenic compounds: dermatitis; hyperpigmentation of the skin

**Eye Contact:**

Lead/arsenic compounds: 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.

Arsenic compounds: Cigarette smoking has been shown to increase the occurrence of lung cancer in people with high levels of arsenic in the drinking water Co-exposure to ethanol and arsenic may exacerbate the toxic effects of arsenic

Tin: Affects the metabolism of various essential minerals such as zinc, copper, and iron

**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

Arsenic: 24 hr $LC_{50}$, freshwater fish (*Carrasisus auratus*) >5000 g/L

## XIII. DISPOSAL INFORMATION

**US**

Spent batteries 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:**

Not regulated as a hazardous material

**AIRCRAFT – ICAO- IATA:**

For air shipments, reference IATA Dangerous Goods Regulations Special Provision A123.

**VESSEL – IMO-IMDG:**

Not regulated as a hazardous material

**ADDITIONAL INFORMATION:**

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

## XV. REGULATORY INFORMATION

**United States:**

**EPA SARA Title III**

***Section 302 EPCRA Extremely Hazardous Substances (EHS):***

Sulfuric acid is a listed "Extremely Hazardous Substance" under EPCRA, with a Threshold Planning Quantity (TPQ) of **1,000 lbs.**

EPCRA Section 302 notification is required if **500 lbs** or more of sulfuric acid is present at one site (40 CFR 370.10). An average automotive/commercial battery contains approximately 5 lbs of sulfuric acid. Contact your GNB representative for additional information.

***Section 304 CERCLA Hazardous Substances:***

Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (Superfund) and EPCRA (Emergency Planning and Community Right to Know Act) is **1,000 lbs**. State and local reportable quantities for spilled sulfuric acid may vary.

***Section 311/312 Hazard Categorization:***

EPCRA Section 312 Tier Two reporting is required for non-automotive batteries if sulfuric acid is present in quantities of **500 lbs** or more and/or if lead is present in quantities of **10,000 lbs** or more.

***Section 313 EPCRA Toxic Substances:***

**Supplier Notification:** This product contains a toxic chemical or chemicals subject to the reporting requirements of section 313 of (Title) III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

| Chemical | CAS | Percent by Weight |
|---|---|---|
| Lead (Pb) | 7439-92-1 | 91-93 |
| Antimony | 7440-36-0 | 0.2 |
| Arsenic | 7440-38-2 | 0.003 |

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 batteries 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:** Spent lead-acid batteries are not regulated as hazardous waste when recycled.

**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.

**NFPA Hazard Rating for dry battery:**

| | | |
|---|---|---|
| Flammability (Red) | = | 0 |
| Health (Blue) | = | 0 |
| Reactivity (Yellow) | = | 0 |

| **US State Notifications & Warnings:** | **Identification** | **Notifications/Warning** |
|---|---|---|
| California | California Proposition 65 | "WARNING: This product contains lead and arsenic, chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm." |
| | | Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. |
| | | 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:<br>1. Arsenic (as arsenic oxides); CAS# 7440-38-2; <0.1% wt<br>2. Strong inorganic acid mists including sulfuric acid; CAS #: NA; 18-24% wt<br>3. Lead – CAS No. 7439-92-1; 71-73% wt. |
| | 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 been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.<br><br>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:<br>Chemical CAS # %wt |

| | | | | |
|---|---|---|---|---|
| | | Lead | 7439-92-1 | 91-93 |
| | | Arsenic | 7440-38-2 | 0.003 |
| | Toxic Substances List | Lead<br>Arsenic | | |
| 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).<br>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.<br>Ontario Ministry of Labor Regulation 654/86. Regulations Respecting Exposure to Chemical or Biological Agents. |

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