

# GHS SAFETY DATA SHEET

## I. PRODUCT IDENTIFICATION

MANUFACTURER/SUPPLIER CHEMICAL/TRADE NAME \*Lead-Acid Battery Non-spillable

Exide Technologies (\* as used on label) Maintenance Free Battery Valve Regulated Battery

Milton, GA 30004 Sealed Lead-Acid Battery PRODUCT ID UN2800

FOR FURTHER INFORMATION

CHEMICAL FAMILY/

Electric Storage Battery

Primary Contact: CLASSIFICATION

Secondary Contact: FOR EMERGENCY

Exide SDS Support (770) 421-3485

Joe Bolea (423) 989-6377 CHEMTREC (800) 424-9300 Joe Kumper (678) 566-9380 (703) 527-3887 – Collect

Fred Ganster (610) 921-4052 24-hour Emergency Response Contact Ask for Environmental Coordinator

# II. HAZARD IDENTIFICATION



Signal Word: Danger

Category:		GHS Codes	Description
		H302/H312/H332	Harmful if swallowed, inhaled, or in contact with skin.
		H314	Acid causes severe skin burns and eye damage.
		H315/H318	Causes skin irritation, serious eye damage.
		H302/H313/H332	Contact with internal components may cause irritation or severe burns.
		H350	May cause cancer if ingested or inhaled.
		H360	May damage fertility or the unborn child if ingested or inhaled.
		H373	Causes damage to central nervous system, blood and kidneys through
	amam 5 = 4		prolonged or repeated exposure if ingested or inhaled.
Health:	STOT RE 2	H220	Extremely flammable gas (hydrogen). May form explosive air/gas mixture
	Acute Tox. 4		during charging.
	Repr. 1A	H203	Explosive, fire, blast or projection hazard.
	Skin Corr. 1A	H410	Very toxic to aquatic life with long lasting effects.
	Flamm Gas 1	P260	Do not breathe dust/fume/gas/mist/vapors/spray.
		P314	If exposed/concerned, or if you feel unwell seek medical attention/advice.
	Aquatic Acute 1	P301/330/331	<b>IF SWALLOWED OR CONSUMED:</b> rinse mouth. Do NOT induce
	Aquatic Chronic 1		vomiting. Call a poison center/doctor if you feel unwell.
	•	P303/361/353	IF ON CLOTHING OR SKIN (or hair): Remove/Take off immediately
			all contaminated clothing and wash it before reuse. Rinse skin with
			water/shower.
		P304/340	<b>IF INHALED:</b> Remove person to fresh air and keep comfortable for
			breathing.
		P305/351/338	<b>IF IN EYES:</b> Rinse cautiously with water for several minutes. Remove
		Part	contact lenses, if present and easy to do. Continue rinsing.
		P311	Immediately call a <b>POISON CENTER</b> or doctor/physician.
		H362	May cause harm to breast-fed children.
		P201	Obtain special instructions before use.
		P202	Do not handle until all safety precautions have been read and understood.
		P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
		P263 P264	Avoid contact during pregnancy/while nursing.
			Wash thoroughly after handling.
Handling:		P270 P280	Do not eat drink or smoke when using this product.
		P403/P405	Wear protective gloves/protective clothing/eye protection/face protection.
		F403/F403	Store locked up, in a well-ventilated area, in accordance with local and national regulation.
		P271	Use only outdoors or in a well-ventilated area.
		P501	Dispose of contents/container in accordance with local & national laws.
		P201	Keep out of reach of children.
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**WARNING:** Batteries subjected to abusive charging at excessively high currents for prolonged periods of time without vent caps in place may create a surrounding atmosphere of an offensive, strong inorganic acid mist containing sulfuric acid.

**Reactivity:** highly reactive with water and alkalis

III. COMPOSITION/INFORMATION ON INGREDIENTS					
Ingredient	CAS Number	% by Wt.			
Inorganic compounds of:					
Lead	7439-92-1	42-70			
Tin	7440-31-5	0.28			
Calcium	7440-70-2	0.03			
Electrolyte (hydrogel):					
Sulfuric Acid (Diluted sulfuric acid in	7664-93-9	23-50			
solid state, percentage acid: 38.5%)	6067-86-0	4-6			
Silicon Dioxide	0007-00-0	7-0			
Case Material:					
Acrylonitrile Butadiene Styrene or	9003-56-9	4-12			
Polypropylene	9003-07-0				
Separator:	9002-88-4	0.5-3.0			

#### 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** Electrolyte: Remove to fresh air immediately. If breathing is difficult, give oxygen.

Lead compounds: Remove from exposure, gargle, wash nose and lips; consult physician

**Skin Contact:** Electrolyte: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely,

including shoes.

Lead compounds: Wash immediately with soap and water.

Eye Contact: Electrolyte and Lead compounds: Flush immediately with large amounts of water for at least 15 minutes; consult

physician immediately

**Ingestion:** Electrolyte: Give large quantities of water; **do not** induce vomiting; consult physician.

Lead compounds: Consult physician immediately

#### V. FIRE FIGHTING MEASURES

Flash Point:	Not Applicable
Flammable Limits:	LEL = 4.1% (hydrogen gas in air); UEL = 74.2%
Extinguishing media:	CO <sub>2</sub> ; foam; dry chemical

## **Fire Fighting Procedures:**

Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid-resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but, note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

#### **Hazardous Combustion Products:**

In operation, batteries generate and release flammable hydrogen gas. They must always be assumed to contain this gas which, if ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive liquid electrolyte. Carefully follow manufacturer's instructions for installation and service. Keep away all sources of gas ignition and do not allow metallic articles to simultaneously contact the negative and positive terminals of a battery.

## VI. ACCIDENTAL RELEASE MEASURES

Stop flow of material, contain/absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. *Do not allow discharge of un-neutralized acid to sewer*. Neutralized acid must be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

## VII. HANDLING AND STORAGE

## Handling:

Single batteries pose no risk of electric shock but there may be increasing risk of electric shock from strings of connected batteries exceeding three 12-volt units. No hazards under normal usage as the sulfuric acid is immobilized in a gel structure)

## **Storage:**

Store batteries under roof in cool, dry, well-ventilated areas that are separated from incompatible materials and from activities which may create flames, sparks, or heat. Keep away from metallic objects that could bridge the terminals on a battery and create a dangerous short-circuit

## **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.

TT	EXPOSURE	CONTROLS AND	PERSONAL	PROTECTION

	Occupational Exposure Limits (mg/m³)					
Ingredient:	US	US	US	Quebec	Ontario	EU
	OSHA	ACGIH	NIOSH	PEV	OEL	OEL
Inorganic forms of:						
Lead	0.05	0.05	0.05	0.05	0.05	0.15(a)
Tin	2	2	2	2	2	2(b)
Calcium	N/A	N/A	N/A	N/A	N/A	N/A
Electrolyte (hydrogel: Sulfuric Acid (Diluted sulfuric acid in solid state, percentage acid: 38.5%)	1	0.2	1	1	0.2	0.05(c)
Silicon Dioxide	80 mg/m <sup>3</sup> /%SiO <sub>2</sub> (d)	N/A	6	6(c)	10(c)	0.1(e)

#### NOTES:

(a) as inhalable aerosol

(e) based on OEL for Belgium & Denmark

based on OEL for Belgium

N/A not applicable

(b) Thoracic fraction

(c) as silica gel

### **Engineering Controls (Ventilation):**

Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant.

Handle batteries cautiously. Make certain vent caps are on securely. If battery case is damaged, avoid bodily contact with internal components. Wear protective clothing, eye and face protection, when charging 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. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection..

#### **Skin Protection:**

None required under normal conditions. If battery case is damaged, rubber or plastic acid-resistant gloves with elbow-length gauntlet.

## **Eye Protection:**

None required under normal conditions. If battery case is damaged, chemical goggles or face shield

### **Other Protection:**

Under severe exposure or emergency conditions, wear acid-resistant clothing, gloves, and boots.

In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply.

## IX. PHYSICAL AND CHEMICAL PROPERTIES - ELECTROLYTE

Boiling Point@760 mm Hg	226 to 237°F	Specific Gravity @ 77°F (H <sub>2</sub> O=1)	1.2185 to 1.3028
Point of	-69°C	Vapor Pressure (mm Hg)	13.5 to 17.8
Solidification			
% Solubility in Water	100	рН	Less than 1
Evaporation Rate	Less Than 1	Vapor Density (AIR=1)	Greater than 1
(Butyl acetate=1)		Viscosity	Not applicable
Appearance and Odor Threshold	Electrolyte is a white translucent gel; no apparent odor. A battery is a manufactured article.	% Volatiles by Volume @70°F	Not Applicable
Octanol Water	Not Applicable		
Partition			
Coefficient (K <sub>ow</sub> )			

Note: The properties above reflect 30-40% Sulfuric acid

## X. STABILITY & REACTIVITY DATA

Stability: Stable X Unstable

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

**Incompatibilities:** (materials to avoid)

Electrolyte (Water and Sulfuric Acid Solution): Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas. No further concern for mechanical impact.

<u>Lead compounds</u>: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents.

## **Hazardous Decomposition Products:**

Electrolyte: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide.

<u>Lead compounds</u>: 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:**

<u>Electrolyte</u>: Harmful by all routes of entry.

<u>Lead compounds</u>: 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<sub>50</sub>: Electrolyte: LC<sub>50</sub> rat: 375 mg/m<sup>3</sup>; LC<sub>50</sub>: guinea pig: 510 mg/m<sup>3</sup>

Elemental Lead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)

Oral LD<sub>50</sub>: <u>Electrolyte</u>: rat: 2140 mg/kg

Elemental lead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)

#### **Inhalation:**

<u>Electrolyte</u>: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.

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

#### **Ingestion:**

Electrolyte: May cause severe irritation of mouth, throat, esophagus, and stomach.

<u>Lead compounds</u>: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea, and severe cramping. This may lead rapidly to systemic toxicity.

#### Skin Contact

<u>Electrolyte</u>: Severe irritation, burns, and ulceration. Sulfuric acid is not readily absorbed through the skin and is not a dermal sensitizer.

<u>Lead compounds</u>: Not absorbed through the skin and not a dermal sensitizer.

## **Eye Contact:**

Electrolyte: Severe irritation, burns, cornea damage, blindness.

Lead compounds: May cause eye irritation.

## **Synergistic Products:**

Electrolyte: No known synergistic products

<u>Lead compounds:</u> 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.

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

## **Additional Information:**

## **Medical Conditions Generally Aggravated by Exposure:**

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of electrolyte (water and sulfuric acid solution) with skin may aggravate skin diseases such as eczema and contact dermatitis. Contact of electrolyte (water and sulfuric acid solution) with eyes may damage cornea and/or cause blindness. 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:

Sulfuric acid: 24-hr LC<sub>50</sub>, freshwater fish (*Brachydanio rerio*): 82 mg/L

96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L

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

### XIII. DISPOSAL INFORMATION

US

Spent batteries: Send to secondary lead smelter for recycling.

Electrolyte: Place neutralized slurry into sealed acid resistant containers and dispose of as hazardous waste, as applicable.

Large water-diluted spills, after neutralization and testing, should be managed 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:

Batteries, Wet, Non-Spillable

UN 2800, 8, PG III

Label: "NON-SPILLABLE" or "NON-SPILLABLE BATTERY"

For US, refer to 49 CFR 173.159 for details.

## **AIRCRAFT - ICAO- IATA:**

For air shipments, reference IATA Dangerous Goods Regulations Special Provision A67 and Packing Instruction 872.

#### **VESSEL – IMO-IMDG:**

For shipments by water, reference IMDG Special Provision 238 and Packing Instruction P003.

## ADDITIONAL INFORMATION:

- Non-Spillable Battery complies with the provisions listed in 49 CFR 173.159. Does not require marking with an identification number or hazardous label and is not subject to hazardous shipping paper requirements.
- Each battery and the outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NON-SPILLABLE BATTERY".
- Batteries must be kept upright at all times and packaged as required to prevent short circuits.
- 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.

<u>Chemical</u>	CAS	Percent by Weight
Lead	7439-92-1	42-70
Sulfuric Acid/Water Solution	7664-93-9	23-50

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. Spilled sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number <u>D002</u> (corrosivity).

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 sulfuric acid:

Flammability (Red) = 0 Health (Blue) = 3 Reactivity (Yellow) = 2

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."			
		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:  1. Strong inorganic acid mists including sulfuric acid; CAS #: NA; 23-50% wt  2. Lead – CAS No. 7439-92-1; 42-70% wt.			defects
	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.	accordance with Controlled Prod MSDS contains by the Controlle Refer to the Con Regulations for requirements.	s been classified in the hazard critericulates Regulations a all the information and Products Regulation throlled Products product labeling	a of the and the n required ations.
		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 42-70 Sulfuric acid 7664-93-9 23-50		
		Toxic Substances List	Lead		

Country/Organization	Identification	Notifications/Warning	
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: November 20, 2015			
OTHER INFORMATION: SOURCES OF INFORMATION:	Distribution into Quebec to follow Canadian Controlled Regulations (CPR) 24(1) and 24(2).  Distribution into the EU to follow applicable Directives Import/Export of the product as-sold.  International Agency for Research on Cancer (1987), IA Monographs on the Evaluation of Carcinogenic Risks to Overall Evaluations of Carcinogenicity: An updating of Monographs Volumes 1-42, Supplement 7, Lyon, Franc Ontario Ministry of Labor Regulation 654/86. Regulation Respecting Exposure to Chemical or Biological Agents.		
E 1	ENVIRONMENTAL, SAFETY AND HEALTH DEPARTMENT EXIDE TECHNOLOGIES 13000 DEERFIELD PKWY., BLDG. 200 MILTON, GA 30004		

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