

Product: Carefree® Valve Regulated Sealed
Lead Acid Battery

Applicable Product CF, CFR, HE
Numbers: series

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SAFETY DATA SHEET

Carefree® and HE Valve Regulated Sealed Lead Acid Batteries

SECTION 1- IDENTIFICATION

Product Identifier/Name: Carefree® valve regulated sealed lead acid battery
Other Means of Identification: None
Manufacturer Name: EaglePicher Technologies, PO Box 49, Joplin, MO 64802
Emergency Telephone: CHEMTREC: 1-800-424-9300
Recommended use: All proper and legal purposes
Recommend Restrictions: None known
Telephone for information: 1-417-623-8000
Product Identifier/Name: Valve Regulated Sealed Lead Acid Battery (VRB, VRLA, SLAB).

SECTION 2- HAZARD IDENTIFICATION

GHS Classification of the substance or mixture:

Metal Corrosion Category 1, Acute Toxicity (oral) Category 4, Acute Toxicity (inhalation) Category 3, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1, Carcinogenicity Category 1A, Reproductive Toxicity Category 1A, Specific Target Organ Toxicity – SE (resp. irr.) Category 3, Specific Target Organ Toxicity – RE Category 2, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1

GHS Label Elements



Signal Word: DANGER

In the Event of the Internal Battery Components Being Exposed:

Hazard Statements:

H290 May be corrosive to metals	H314 Causes severe skin burns and eye damage.
H302 Harmful if swallowed	H318 Causes serious eye damage.
H331 Toxic if inhaled	H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.	H400 Very toxic to aquatic life
H372 Causes damage to organs - nervous system.	H420 Very toxic to aquatic life with long lasting effects

In the Event of Exposure to Internal Components:

Precautionary Statements:

- P202** Do not handle until all safety precautions have been read and understood.
- P260** Do not breathe mist/vapors/spray
- P264** Wash thoroughly after handling
- P270** Do not eat, drink or smoke when using this product.
- P280** Wear protective gloves/protective clothing/eye protection/face protection

Response:

- P301+P312** IF SWALLOWED: Call a POISON CENTER/ doctor/physician/ first aider/if you feel unwell.
- P301+P330+P331** IF SWALLOWED: Rinse mouth. Do NOT induce
- P302+P352** IF ON SKIN: Wash with plenty of water and soap
- P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313** IF exposed or concerned: Get medical advice/attention
- P310** Immediately call a POISON CENTER/ doctor/physician/ first aider
- P333+P313** If skin irritation or rash occurs: Get medical advice/attention.
- P342+P311** If experiencing respiratory symptoms: Call a POISON CENTER/ doctor/ physician/ first aider
- P363** Wash contaminated clothing before reuse.
- P390** Absorb spillage to prevent material damage.
- P391** Collect spillage.

Other Hazards:

OSHA HCS 2012: Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

SECTION 3 - COMPOSITION, INFORMATION ON INGREDIENTS

The following list of chemicals may be found in EaglePicher Technologies Lead Acid batteries. The specific battery number will determine the exact ingredients and percentages.

Chemical Name	CAS Number	Composition (%) by Weight	Classification
Lead/Lead Oxide/Lead Sulfate	7439-92-1	60-70	Repr. 1A; STOT RE 1 (Liver, Kidney, Blood, Nervous system); Carc. 2
Sulfuric acid	7664-93-9	10-15	Eye Dam. 1; Skin Corr. 1A
Calcium (lead calcium alloy)	7440-70-2	<0.15	N/A
Arsenic (inorganic)	7440-38-2	<1	N/A
Tin	7440-31-5	<1	N/A
Inert ingredients	NA	<6	N/A

CA Prop 65 Warning: Battery posts, terminals, and related accessories can contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm, and during charging, strong

inorganic acid mists containing sulfuric acid are evolved, a chemical know to the State of California to cause cancer. Wash hands after handling.

SECTION 4- FIRST AID MEASURES

- Inhalation - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Skin - IF ON SKIN: Wash with plenty of water for at least 15 minutes. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, seek medical attention.
- Eyes - IF IN EYES: Rinse with water for at least 15 minutes while holding eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. If signs/symptoms develop, get medical attention.
- Ingestion - Do NOT induce vomiting. If conscious, drink large quantities of milk or water. Get medical attention immediately. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

Acute: Electrolyte is corrosive and contact may cause skin irritation and chemical burns. Electrolyte causes severe irritation and burns of eyes, nose and throat. Ingestion can cause severe burns and vomiting.

Subchronic and Chronic Health Effects: Repeated contact with electrolyte causes irritation and skin burns. Repeated exposure to mist may cause erosion of teeth, chronic eye irritation and/or chronic inflammation of the nose, throat and lungs.

Prolonged exposure to lead may cause central nervous system damage, gastrointestinal disturbances, anemia, irritability, metallic taste, insomnia, wrist-drop, kidney dysfunction, and reproductive system disturbances. Pregnant women should be protected from excessive exposure to prevent lead from crossing the placental barrier and causing infant neurological disorders.

Medical Conditions Generally Aggravated by Exposure: Contact with internal components if battery is broken or opened, then persons with the following conditions must take precautions: pulmonary edema, bronchitis, emphysema, dental erosion and tracheobronchitis.

Routes of Entry:

Inhalation, ingestion

SECTION 5- FIRE FIGHTING MEASURES

Flash Point: Not Applicable	Flammable Limits in Air % by Volume: NA	Extinguishing Media: Class ABC Dry Chemical, CO2, Halon.	Auto-Ignition: Not Applicable
Special Fire Fighting Procedures	Lead acid batteries do not burn, or burn with difficulty. Do not use water on fires where molten metal is present. Extinguish fire with agent suitable for surrounding combustible materials. Cool exterior of battery if exposed to fire to prevent rupture. The acid mist and vapors generated by heat or fire are corrosive. Use NIOSH approved self-contained		

	breathing apparatus (SCBA) and full protective equipment operated in positive-pressure mode. Unsuitable Extinguishing Media: Water should not be used unless from a safe distance due to vigorous and exothermic reaction which will result.
Unusual Fire and Explosion Hazards	Sulfuric acid vapors are generated upon overcharge and polypropylene case failure. Use adequate ventilation. Avoid open flame/spark/other sources of ignition near battery.

SECTION 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use acid resistant aprons, boots, and protective clothing. ANSI approved safety glasses with side shields and face shield recommended.

Methods and Materials for Containment and Cleanup:

As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Do not get water inside container.

Avoid contact with any spilled material. Stop leak if you can do it without risk. If battery is leaking, place battery in a heavy duty plastic bag. Contain spill by diking with soda ash, etc. Neutralize spill area with soda ash or lime, dilute with acetic acid. Make certain mixture is neutral then collect residue and place in a drum or other suitable container.

Environmental Precautions:

Lead and its compounds and sulfuric acid can pose a severe threat to the environment. Contamination of water, soil, and air should be prevented. Avoid runoff to waterways and sewers.

SECTION 7- HANDLING AND STORAGE

Precautions to be Taken in Handling and Storage: Store away from reactive materials, open flames and sources of ignition as defined in Section 10 – Stability and Reactivity Data. Store batteries in cool, dry, well ventilated areas. Batteries should be stored under roof for protection against adverse weather conditions. Avoid damage to containers.

Other Precautions: Good personal hygiene and work practices are mandatory. Refrain from eating, drinking or smoking in work areas. Thoroughly wash hands, face, neck and arms before eating, drinking and smoking. Work clothes and equipment should remain in designated lead contaminated areas, and never taken home or laundered with personal clothing. Wash soiled clothing, work clothes and equipment before reuse.

SECTION 8 - EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure Limits / Guidelines		
Chemical Name	OSHA PEL/TWA Exposure Limits	ACGIH TLV
Lead/Lead Oxide/Lead Sulfate	0.05 mg/m ³	0.05 mg/m ³
Sulfuric acid	1.0 mg/m ³	1.0 mg/m ³
Calcium (lead calcium alloy)	Not established	Not established
Arsenic (inorganic)	0.01 mg/m ³	0.01 mg/m ³
Tin	2 mg/m ³	2 mg/m ³
Inert ingredients	N/A	N/A

Note: PELs for individual states may differ from OSHA PELs. Check with local authorities for the applicable state PELs.

Engineering Controls:

No specific engineering controls are required to prevent exposure to internal components of the sealed battery. Use local exhaust when PEL is exceeded.

Exposure Controls:

Personal Protective Equipment:

Respiratory Protection: None required under normal conditions. Acid gas NIOSH approved respirator when the PEL is exceeded or employee experiences respiratory irritation.

Protective Gloves: Wear acid resistant gloves.

Eye Protection: ANSI approved safety glasses with side shields. Face shield recommended.

Other Protective Clothing or Equipment: Safety shower and eyewash.

Administrative Controls:

Follow proper handling guidelines in this SDS.

SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 mm Hg)	N/A
SPECIFIC GRAVITY	1.250 – 1.320
VAPOR PRESSURE (mm Hg, 25°C)	N/A
VAPOR DENSITY (air=1)	Hydrogen: 0.069 Electrolyte: 3.4 @ STP
VOLATILE BY VOLUME (%)	N/A
EVAPORATION RATE (butyl acetate=1)	N/A
PHYSICAL STATE	Solid plastic rectangular shape. .
SOLUBILITY IN WATER (% by weight)	100% soluble (electrolyte)
PH	< 2
APPEARANCE	Battery: Plastic solid. Case has metal terminals. Lead: gray, metallic, solid; gray/brown oxide Electrolyte: clear liquid
ODOR	Odorless, liquid absorbed in glass mat material. No apparent odor
ODOR THRESHOLD	N/A
MELTING POINT/FREEZING POINT	> 320°F

FLAMMABILITY	N/A
UPPER/LOWER FLAMMABILITY EXPLOSIVE LIMITS	N/A
RELATIVE DENSITY	N/A
PARTITION COEFFICIENT: N-OCTANOL/WATER	N/A
AUTO IGNITION TEMPERATURE	N/A
DECOMPOSITION TEMPERATURE	Cases decompose at >320° F
VISCOSITY	N/A

SECTION 10- STABILITY AND REACTIVITY

1. REACTIVITY: Electrolyte – water reactive (1)
2. STABLE OR NOT STABLE: Stable
3. INCOMPATIBILITY (MATERIAL TO AVOID): Sparks, open flames, keep battery away from strong oxidizers.
4. HAZARDOUS DECOMPOSITION PRODUCTS: Combustion can produce carbon dioxide and carbon monoxide. Will release an explosive hydrogen/oxygen gas mixture. Oxides of lead, lead, and/or lead compounds may be released. Sulfuric acid may release sulfur dioxide and/or sulfur trioxide.
5. HAZARDOUS POLYMERIZATION: Has not been reported.
6. CONDITIONS TO AVOID: Avoid short-circuiting, overcharging and smoking or sparks near battery surface. Cases decompose at >320° F.

SECTION 11- TOXICOLOGICAL INFORMATION

GHS Properties	Classification
Acute toxicity	EU/CLP • Acute Toxicity - Oral 4 - ATEmix = 703.47 mg/kg OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Carcinogenicity 2
Germ Cell Mutagenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	EU/CLP • Skin Corrosion 1A OSHA HCS 2012 • Skin Corrosion 1A
Skin sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-RE	EU/CLP • Specific Target Organ Toxicity Repeated Exposure 2 OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1
STOT-SE	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	EU/CLP • Toxic to Reproduction 1A OSHA HCS 2012 • Toxic to Reproduction 1A
Respiratory sensitization	EU/CLP • Classification criteria not met

	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	EU/CLP • Classification criteria not met OSHA HCS 2012 • Serious Eye Damage 1

Potential Health Effects

Inhalation

Acute (Immediate)	<p>Lead - For industry, inhalation is much more important than is ingestion. Systemic effects include loss of appetite, anemia, malaise, insomnia, headache, irritability, muscle and joint pains, tremors, flaccid paralysis without anesthesia, hallucinations and distorted perceptions, muscle weakness, gastritis and liver changes. Major organ systems affected are the nervous system, blood system and kidneys. Experimental evidence suggests that blood levels of lead below 10 µg/dL can lower the IQ scores of children. Low levels of lead impair neurotransmission and immune system function and may increase systolic blood pressure. Reversible kidney damage can occur from acute exposure.</p> <p>Sulfuric Acid - Experimental poison by inhalation.</p>
Chronic (Delayed)	<p>Lead - Chronic exposure can lead to irreversible vascular sclerosis, tubular cell atrophy, interstitial fibrosis, and glomerular sclerosis. Very heavy intoxication can sometimes be detected by formation of a dark line on the gum margins.</p> <p>Sulfuric acid - Repeated or prolonged inhalation of sulfuric acid mist can cause inflammation of the upper respiratory tract, leading to chronic bronchitis. Severe exposure may cause chemical pneumonitis. Erosion of tooth enamel due to strong acid fume exposure has been observed in industry. Workers exposed to low concentrations of the vapors gradually lose their sensitivity to its irritating action. Occupational exposures to strong-acid mists containing sulfuric acid have been associated with several respiratory tract cancers. However, there is no animal data supporting the carcinogenicity of sulfuric acid. Sulfuric acid has been found to be non-mutagenic, and in two studies of workers employed in lead acid battery manufacture, no association between sulfuric acid mist exposure and respiratory tract cancers was observed.</p>

Skin

Acute (Immediate)	Sulfuric Acid - Extremely irritating, corrosive, and toxic to tissue, resulting in rapid destruction of tissue, causing severe burns. If much skin is involved, exposure is accompanied by shock, collapse and symptoms similar to those seen in severe burns. Repeated contact with dilute solutions can cause dermatitis.
Chronic (Delayed)	No Data Available

Eyes

Acute (Immediate)	Causes serious eye damage.
Chronic (Delayed)	No Data Available

Ingestion

Acute (Immediate)	Lead - Poison by ingestion in large dosages and with prolonged exposure leading to the same effects as seen in exposure by inhalation. Adults absorb 5-15% of ingested lead and retain less than 5%. Children absorb about 50% and retain about 30%. Sulfuric Acid - Moderately toxic by ingestion.
Chronic (Delayed)	No Data Available

Reproductive Effects	<p>Lead - Severe toxicity can cause sterility, abortion, and neonatal mortality and morbidity. Experimental teratogen. Experimental reproductive effects. Pathological lesions have been found on male gonads.</p> <p>Sulfuric Acid - Experimental teratogen.</p>
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Carcinogenic Effects	Repeated and prolonged exposure may cause cancer.
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Carcinogenic Effects

Chemical	CAS	IARC	NTP
Sulfuric acid	7664-93-9	Group 1-Carcinogenic	Not Listed
Lead	7439-92-1	Group 2A-Probable Carcinogen	Reasonably Anticipated to be Human Carcinogen
Lead as Lead Compounds	NO DATA AVAILABLE	Not Listed	Reasonably Anticipated to be Human Carcinogen
Lead as Lead, inorganic compounds	NO DATA AVAILABLE	Group 2A-Probable Carcinogen	Not Listed

SECTION 12- ECOLOGICAL INFORMATION

In most surface water and groundwater, lead forms compounds with anions such as hydroxides, carbonates, sulfates, and phosphates, and precipitates out of the water column. Lead may occur as sorbed ions or surface coatings on sediment mineral particles or may be carried in colloidal particles in surface water. Most lead is strongly retained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or clays or by chelation with humic or fulvic acids in the soil. Lead (dissolved phases) is bioaccumulated by plants and animals, both aquatic and terrestrial.

1. When properly used or disposed of the battery does not present an environmental hazard.
2. Do not let internal components enter marine environment. Avoid release to waterways, wastewater or ground water.
3. Toxicity - Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects
4. Persistence and degradability - Material data lacking.
5. Results of PBT and vPvB assessment PBT and vPvB assessment has not been conducted for this material.

SECTION 13- DISPOSAL CONSIDERATIONS

Lead acid batteries are completely recyclable. Return whole scrap batteries to a permitted recycler. For neutralized spills, place residue in acid-resistant containers with sorbent material and dispose of in accordance with the applicable regulations in country and state.

SECTION 14- TRANSPORT INFORMATION

EaglePicher Technologies Carefree® batteries are valve regulated lead acid (VRLA) batteries that have passed vibration, pressure differential and free-flowing acid tests under CFR 49 173.159(d) and meet IATA Special Provisions A48, A67, A164, 183, PI872 (IATA 60th Edition).

IMDG: Exempted from regulations, meets the requirements in Special Provision 238.

The batteries are securely packaged, protected from short circuits and labeled “Non-Spillable” or “Non-Spillable Battery.”

Carefree® batteries are exempt from DOT Hazardous Material Regulations and IATA Dangerous Goods Regulations.

NOTE: Shipper has the option of shipping the batteries Hazmat regulated under UN2800. Additional labeling and paperwork would be required. See CFR 49 and IATA Dangerous Goods Regulations for more information.

If the battery is not shipped in the original packaging or no longer meets any of the referenced requirements above, then the package must be shipped as follows:

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	UN2800	Batteries, Wet, Non-spillable	Hazard Class 8	Packing Group II	
TDG	UN2800	Batteries, Wet, Non-spillable	Hazard Class 8	Packing Group II	
IMO/IMDG	UN2800	Batteries, Wet, Non-spillable	Hazard Class 8	Packing Group II	
IATA/ICAO	UN2800	Batteries, Wet, Non-spillable	Hazard Class 8	Packing Group II	

SECTION 15- REGULATORY INFORMATION

U.S. Hazardous under OSHA Hazard Communication Standard: Lead – Yes
Arsenic – Yes
Sulfuric Acid – Yes

Ingredients Listed on TSCA Inventory: Yes
CERCLA Section 304 Hazardous Substance Lead – Yes RQ: N/A
Arsenic – Yes RQ: 1 pound
Sulfuric Acid – Yes RQ: 1000 pounds

EPCRA Section 302 Extremely Hazardous Substance: Sulfuric Acid – Yes
EPCRA Section 313 Toxic Release Inventory: Lead – CAS NO: 7439-92-1
Arsenic – CAS NO: 7440-38-2
Sulfuric Acid – CAS NO 7664-93-9

SECTION 16- OTHER INFORMATION

This SDS is intended to provide a summary of our knowledge and guidance regarding the use of this chemical. The information contained here has been compiled from sources considered by EaglePicher Technologies, LLC to be dependable and is accurate to the best of the Company’s knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations. This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. EaglePicher Technologies, LLC assumes no responsibility for injury to the recipient or third persons or for any damage to any property resulting from misuse of the chemical.

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