



**Material Safety Data Sheet**  
**Valve Regulated Lead Acid Battery**  
“Battery Non-Spillable 49 CFR 173.159 (d)”

**SECTION I**

<b>Manufacturer's Name:</b> SEC Industrial Battery Co. (China) Ltd. Tianxing Industrial District Tangxia Town, Dongguan Guangdong P. R. China Battery Tel. + 86 769 772 2374 Fax. + 86 769 792 7259	<b>Date:</b> May 2011  <b>Trade Name:</b> CELLYTE 12PLF/PLT Range Sealed Valve Regulated Non Spillable
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**SECTION II**  
**HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

<b>Hazardous Components Specific Chemical Identity (Common Name(s))</b>	<b>OSHA PEL (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>ACGIH TLV (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>NIOSH (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Range Percent By Weight</b>
Lead, CAS #7439921	50	150	10	65%-75%
Tin, CAS #7440315	2000	2000	--	<0.5%
Calcium, CAS #7440702	--	--	--	<0.1%
Dilute Sulfuric Acid, CAS #7664939	1000	1000	1000	~20%
Fiberglass Separator	--	--	--	~5%
Case Material: Acrylonitrile Butadiene Styrene (ABS), CAS #9003569, 9003070	--	--	--	~5%

**SECTION III**  
**PHYSICAL/CHEMICAL CHARACTERISTIC**

<b>COMPONENTS</b>	<b>DENSITY</b>	<b>MELTING/BOILING (M/B) POINT</b>	<b>SOLUBILITY (H<sub>2</sub>O)</b>	<b>ODOR</b>	<b>APPEARANCE</b>
Lead	11.34	327.46°C, 621.43°F (M)	None	None	Sliver-Gray Metal
Lead Sulfate	6.20	1170°C, 2138°F (B)	40mg/l (15°C, 59°F)	None	White Crystals or Power
Lead Dioxide	9.40	290°C, 554°F (M)	None	None	Dark Brown Power
Sulfuric Acid	~1.3	95°C-115°C, 203°F- 240°F (B)	100%	Sharp, penetrating, pungent odor	Clear Colorless Liquid
Fiberglass separator	--	--	Slight	None	White Fibrous
Case Material: Acrylonitrile Butadiene Styrene (ABS)	--	--	None	None	Solid

## SECTION IV FIRE AND EXPLOSION HAZARD DATA

COMPONENTS	FLASHPOINT	EXPLOSIVE LIMITS	COMMENTS
Lead	None	None	None
Sulfuric Acid	None	None	None
Hydrogen	--	LEL=4.1%	Sealed batteries can emit hydrogen only if over charged (float voltage > 2.4Vpc). The gas enters the air through the vent caps. To avoid the chance of a fire or explosions, keep sparks and other sources of ignition away from the battery. Extinguishing Media: Dry chemical, foam, CO <sub>2</sub>
Fiberglass separator	--	--	Toxic vapors may be released. In case of fire: wear self-contained breathing apparatus.
Acrylonitrile Butadiene Styrene	None	--	Temperatures over 300~380°C (572~653°F) may release combustible gases. In case of fire: wear positive pressure self-contained breathing apparatus.

## SECTION V REACTIVITY DATA

**Component: Lead/lead compounds**

**Stability:** Stable

**Incompatibility:** Potassium, carbides, sulfides, peroxides, phosphorus, sulfurs, ketone, ester, petrolatum

**Decomposition products:** Oxides of lead and sulfur

**Condition to avoid:**

High temperature, Sparks and other sources of ignition

Contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Component: Sulfuric Acid**

**Stability:** Stable

**Incompatibility:** Reactive metals, strong bases, most organic compounds

**Decomposition products:** Sulfuric dioxide, trioxide, hydrogen sulfide, hydrogen

Excessive overcharging or fire may create Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen.

**Condition to avoid:**

Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Polymerization:** Sulfuric acid will not polymerize

## SECTION VI HEALTH HAZARD DATA

Battery is considered as sealed non-spillable one. Under normal operating conditions, the materials sealed inside should not be hazardous to people's health. Only when these materials exposed during production or under case broken condition or being extremely heated (fired), they may be hazardous to people's health.

**Route(s) Of Entry:**

Sulfuric Acid: Harmful by all routes of entry.

Lead Compounds: Hazardous Exposure can occur only when product is heated, oxidized, or otherwise processed or damaged to create dust, vapor or fume.

**Carcinogenicity:**

Sulfuric Acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category I carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product such as overcharging, may result in the generation of sulfuric acid mist.

Lead Compounds: Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.

Arsenic: Listed by National Toxicology Program (NTP), IARC, OSHA and NIOSH as a carcinogen only after prolonged exposure at high levels.

**Inhalation:**

Sulfuric Acid: Breathing sulfuric acid vapors and mists may cause severe respiratory problems.

Lead Compounds: Dust or fumes may cause irritation of upper respiratory tract or lungs.

Fiberglass Separator: Fiberglass is an irritant to the upper respiratory tract, skin and eyes. For exposure up to 10F % use MSA Comfall with type H filters. Above 10F use Ultra Twin with type H filter. This product is not considered carcinogenic by NTP or OSHA

**Skin Contact:**

Sulfuric Acid: Severe skin irritation, burns, damage to cornea may cause blindness, upper respiratory irritation.

Lead Compounds: Not absorbed through the skin.

**Ingestion:**

Sulfuric Acid: May cause severe irritation of the mouth, throat, esophagus, and stomach.

Lead Compounds: May cause abdominal pain, nausea, headaches, vomiting, loss of appetite, severe cramping, muscular aches and weakness, and difficulty sleeping. The toxic effects of lead are cumulative and slow to appear. It affects the kidneys, reproductive and central nervous systems. The symptoms of lead overexposure are listed above. Exposure to lead from a battery most often occurs during lead reclamation operations through the breathing or ingestion of lead dust or fumes.

**Signs and Symptoms of Exposure:**

Avoid contact, with absorbed electrolyte (sulfuric acid) may cause irritation of eyes, nose and throat. Contact with eyes and skin causes irritation and skin burns. Absorbed electrolyte is corrosive.

**Medical Conditions Generally Aggravated by Exposure:**

Pregnant women and children must be protected from lead exposure.

**Health Hazards (Acute and Chronic):**

Do not open battery, avoid contact with internal components. Internal components include lead and absorbed electrolyte. Electrolyte is corrosive and contact may cause skin irritation and chemical burns.

**Emergency and First Aid Procedures:**

**Inhalation**

Sulfuric Acid: Remove to fresh air immediately. If breathing is difficult, give oxygen

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

**Ingestion**

Sulfuric Acid: Do not induce vomiting, consult a physician immediately.

Lead Compounds: Consult a physician immediately

**Eyes**

Sulfuric Acid: Flush immediately with water for 15 minutes, consult a physician.

Lead Compounds: Flush immediately with water for 15 minutes, consult a physician

**Skin**

Sulfuric Acid: Flush with large amounts of water for at least 15 minutes, remove any contaminated clothing. If irritation develops seek medical attention.

Lead Compounds: Wash with soap and water.

## SECTION VII PRECAUTIONS FOR SAFE HANDLING AND USE

**Spill or Leak Procedures**

In case the release occurs, stop flow of material: contain/absorb small spills with dry sand, earth, and vermiculite. 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.

**Waste Disposal Method**

Spent Batteries - send to secondary lead smelter for recycling. Follow applicable federal, state and local regulations Neutralize as in preceding step. Collect neutralized material in sealed container and handle as hazardous waste as applicable.

A copy of this MSDS must be supplied to any scrap dealer or secondary lead smelter with the battery. Or, consult state environment agency and/ or federal EPA.

**Handling and Storing**

Store batteries in a cool, dry, well ventilated area that are separated from incompatible materials and any activities which may generate flames, sparks, or heat. Keep all metallic articles that could contact the negative and positive terminals on a battery and create a short circuit condition. Battery should be stored under roof for protection against adverse weather conditions. Store and handle only in areas with adequate water supply and spill control. Avoid damage to battery case.

**Electrical Safety**

Due to the battery's low internal resistance and high power density, high levels of short circuit current can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instructions and

diagrams when installing or maintaining battery systems.

**Fiberglass Separator**

Fiberglass is an irritant to the upper respiratory tract, skin and eyes. For exposure up to 10F % use MSA Comfoll with type H filters. Above 10F use Ultra Twin with type H filter. This product is not considered carcinogenic by NTP or OSHA.

## SECTION VIII CONTROL MEASURES

**Engineering Controls:**

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

**Work Practices:**

Handle batteries cautiously to avoid damaging the case. Avoid contact with internal components. Do not allow metallic articles to contact the battery terminals during handling.

**Respiratory Protection:**

None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

**Ventilation:**

Ventilation MUST be provided when charging in an enclosed area.

**Personal Protection and Equipment:** None needed under normal conditions. If battery case is damaged,

- Protective gloves: use rubber or plastic acid-resistant gloves with elbow-length gauntlet.
- Eye protection: use chemical goggles or face shield.
- Other protection: Acid-resistant apron. Under severe exposure or emergency conditions, wear acid –resistant clothing and boots.
- In areas where sulfuric acid is handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply.

## SECTION IX OTHER REGULATORY INFORMATION

**NFPA HAZARD RATING FOR SULFURIC ACID**

Not applicable under normal conditions.

<u>NFPA Hazard Rating</u>	<u>Sulfuric Acid</u>	<u>Lead</u>
Health (BLUE)	3	3
Flammability (Red)	0	0
Reactivity (Yellow)	2	0

Note: Sulfuric acid is water-reactive if concentrated.

**Proper Shipping Name:**

UN2800 — Batteries, wet, Non-Spillable, and electric storage  
Batteries, dry, Non-Spillable, and dry storage

**North America Ground and Air Shipment**

Our non-spillable lead acid batteries are under the U.S. Department of Transportation’s (DOT) hazardous materials regulations but are excepted from these regulations since they meet all of the following requirements found at 49 CFR 173.195(d)-NMFC #60680 Class 65.

- When offered for transport, the batteries are protected against short circuits and securely packaged as required by 49CFR 173.159(d) (1);
- The batteries and outer packaging are marked with the words NONSPILLABLE BATTERY as required by 49 CFR 173.159(d) (2);

The batteries comply with the vibration and pressure differential tests found in 49 CFR 173.159(d) (3) and “crack test” found at 49 CFR 173.159(d) (4).

**International Shipments**

Our non-spillable lead acid batteries also are excepted from the international hazardous materials (also known as “dangerous goods”) regulations since they comply with the following requirements:

- The vibration and pressure differential tests found in Packing Instruction 806 and Special Provision A67 of the **International Air Transport Association (IATA) Dangerous Goods Regulations;**
- The vibration and pressure differential tests found in Packing Instruction 806 and Special Provision A67 of the **International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air;**
- The vibration, pressure differential and “crack” tests found in Special Provision 238.1 and 238.2 of the

**International Maritime Dangerous Goods (IMDG) Code.**

**RCRA**

Spent lead acid batteries are not regulated as hazardous waste by the EPA when recycled, however state and international regulations may vary.

**CERCLA (superfund) and EPCRA**

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

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

(c) EPCRA Section 302 Notification is required if 1,000lbs or more of sulfuric acid is present at one site. The quantity of sulfuric acid will vary by battery type. You can contact SEC Industrial Battery Co. for additional information.

(d) EPCRA Section 312 Tier 2 reporting is required for batteries if sulfuric acid is present in quantities of 500lbs. or more and/or lead is present in quantities of 10,00lbs or more.

(e) Supplier Notification: This product contains toxic chemicals which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. If you are 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	7439921	60
Sulfuric Acid	7664939	10 - 30
Arsenic	7440382	<0.01

If you distribute this product to other manufacturers in SIC codes 20 through 39, this information must be provided with the first shipment in a calendar year. The Section 313 supplier notification requirement does not apply to batteries which are "consumer products". Not present in all battery types. You can contact SEC Industrial Battery Co. for further information.

**TSCA**

Components	CAS Number	TSCA Status
Electrolyte Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	7664939	Listed
Inorganic Lead Compound: Lead (Pb)	7439921	Listed
Lead Oxide (PbO)	1917368	Listed
Lead Sulfate (PbSO <sub>4</sub> )	7446142	Listed
Calcium (Ca)	7440702	Listed
Tin (Sn)	7440315	Listed
Arsenic (As)	7440382	Listed

**California Prop 65:** Battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. **Wash hands after handling.**

For additional information concerning SEC Industrial Battery Co. products or questions concerning the content of this MSDS please contact your SEC representative.

This information is accurate to the best of SEC Industrial Battery Co.'s knowledge or obtained from sources believed by SEC to be accurate. Before using any product read all warnings and directions on the label.