



## MATERIAL SAFETY DATA SHEET

### SECTION 1: Chemical product and company identification

Updated: Jan. 7, 2020

Chemical/Trade Name (as used on label)	Chemical Family/Classification
Sealed Lead Acid Battery	Electric Storage Battery

### SECTION 2: Hazards identification

Product contains toxic chemicals that are subject to the reporting requirements of Section 302 and 313 of the Emergency Planning and Community Right-to-Know Act of 1986).

### SECTION 3: Composition / Information on ingredients

Material	Exposure Limits		Air Exposure Limits (ug/m <sup>3</sup> )		
	% By Wt.	CAS Number	OSHA	AGGIH	NIOSH
Lead	64	7439-92-1	50	150	100
Lead Oxide	22	1309-60-0	50	150	100
Separator	14	7664-93-9	1	1	1

### SECTION 4 : First Aid Procedures:

Inhalation	Remove from exposure and apply oxygen if breathing is difficult.
Skin	Wash with plenty of soap and water. Remove any contaminated clothing.
Eyes	Flush with plenty of water immediately for at least 15 minutes. Consult a physician.
Ingestion	Consult a physician immediately.



## SECTION 5 : Fire fighting measures

Flash Point	Hydrogen = 259oC
Auto ignition Temperature	Hydrogen = 580oC
Extinguishing Media	Dry Chemical, foam, CO2
Unusual Fire and Explosion Hazards	Hydrogen and oxygen gases are produced in the cells during normal battery operation (hydrogen is flammable and oxygen supports combustion). These gases enter the air through the vent caps. To avoid the chance of a fire or explosion, keep sparks and other sources of ignition away from the battery.

## SECTION 6 : Accidental release measures

- Remove combustible materials and all sources of ignition. Cover sills with soda ash (sodium carbonate) or quicklime (calcium oxide). Mix well. Make certain mixture is neutral then
- collect residue and place in a drum or other suitable container. Dispose of a hazardous waste.

Wear acid-resistant boots, chemical face shield, chemical splash goggles, and

- acid-resistant gloves.

**Do not release un-neutralized acid.**

## SECTION 7 : Handling and storage

### Hygiene Practices:

Following contact with internal battery components, wash hand thoroughly before eating, drinking, or smoking.

### Respiratory Protection:

Wear safety glasses. Do not permit flames or sparks in the vicinity of battery(s). If battery electrolyte (acid) comes in contact with clothing, discard clothing.

### Other Handling and Storage Precautions:

None Required.

## SECTION 8: Exposure controls / Personal protection

### Engineering Controls:

Store lead/acid batteries with adequate ventilation. Room ventilation is required for batteries utilized for standby power generation. Never recharge batteries in an unventilated, enclosed space.

### Work Practices:

Do not remove vent caps. Follow shipping and handling instructions that are applicable to the battery type. To avoid damage to terminals and seals, do not double-stack industrial batteries.

### Respiratory Protection:

None required under normal handling conditions. During battery formation (high-rate charge condition), acid mist can be generated which may cause respiratory irritation. Also, if acid spillage



occurs in a confined space, exposure may occur. If irritation occurs, wear a respirator suitable for protection against acid mist.

**Eyes and Face:**

Chemical splash goggles are preferred. Also acceptable are "visor-gogs" or a chemical face shield worn over safety glasses.

**Hands, Arms, Body:**

Vinyl coated, VC, gauntlet type gloves with rough finish are preferred.

**Other Special Clothing and Equipment:**

Safety shoes are recommended when handling batteries. All footwear must meet requirements of

**SECTION 9 : Physical and chemical properties**

Material is Solid at normal temperatures.

**Electrolyte:**

<b>Boiling Point</b>	230°F / 110°C	<b>Melting Point</b>	Lead 327.4°C
<b>Specific Gravity</b>	1.215 - 1.350	<b>Vapor Density</b>	Not determined
<b>% Volatiles By Weight</b>	Not Applicable	<b>Vapor Pressure</b>	Not determined
<b>Solubility in Water</b>	100% (electrolyte)	<b>Evaporation Rate</b>	Not determined

Appearance and Odor: Electrolyte is a clear liquid with a acidic odor

**SECTION 10 : Chemical stability and reactivity information**

<b>Stability</b>	Stable
<b>Conditions to Avoid</b>	Sparks and other sources of ignition

**Incompatibility: (materials to avoid)**

1. Lead/lead compounds: Potassium, carbides, sulfides, peroxides, phosphorus, sulfur.
2. Battery electrolyte (acid): Combustible materials, strong reducing agents, most metals, carbides, organic materials, chlorates, nitrates, picrates, and fulminates.

**Hazardous Decomposition Products**

1. Lead/lead compounds: Oxides of lead and sulfur.
2. Battery electrolyte (acid): Hydrogen, sulfur dioxide, and sulfur trioxide.

**Conditions to Avoid**

High temperature. Battery electrolyte (acid) will react with water to produce heat. Can react with oxidizing or reducing agents.

**SECTION 11 : Toxicological information**



Under normal operating conditions, the internal material will not be hazardous to your health. Only internally exposed material during production or case breakage or extreme heat (fire) may be hazardous to your health.

**Routes of Entry:**

<b>Installation</b>	Acid mist from formation process may cause respiratory irritation.
<b>Skin Contact</b>	Acid may cause irritation, burns and/or ulceration.
<b>Skin Absorption</b>	Not a significant route of entry.
<b>Eye Contact</b>	Acid may cause sever irritation, burns, cornea damage and/or blindness.
<b>Ingestion</b>	Acid may cause irritation of mouth, throat, esophagus and stomach.

**Sign and Symptoms of Over Exposure:**

<b>Acute Effects</b>	Over exposure to lead may lead to loss of appetite, constipation, sleeplessness and fatigue. Over exposure to acid may lead to skin irritation, corneal damage of the eyes and upper respiratory system.
<b>Chronic Effects</b>	Lead and its components may cause damage to kidneys and nervous system. Acid and its components may cause lung damage and pulmonary conditions.
<b>Potential to Cause Cancer</b>	The International Agency for Research on Cancer has classified “strong inorganic acid mist containing sulfuric acid” as a Category 1 carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist is not generated under normal use of this product. Misuse of the product, such as overcharging, may however result in the generation of sulfuric acid mist.

**SECTION 12 : Ecological information**

**California Proposition 65:**

The State of California has determined that certain battery terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm.

**Warning: Wash hands thoroughly after handling batteries.**

**SECTION 13 : Disposal considerations**

**Waste Disposal Method:**

Battery electrolyte (acid): Neutralize as above for a spill, collect residue, and place in a drum or suitable container. Dispose of as hazardous waste. Do not flush lead contaminated acid to sewer.

**Batteries:**

Send to lead smelter for reclamation following applicable Federal, state and local regulations. Product can be recycled along with automotive (SLI) lead acid batteries..



<b>SECTION 14: Transportation information</b>	
<b>Land Transport</b>	Land Transport (ADR/RID,U.S.DOT) <ul style="list-style-type: none"><li>- UN No UN2800</li><li>- Classification ADR/RID: Class 8</li><li>- Proper Shipping Name: Batteries, non-spillable electric storage</li><li>- Packing Group ADR: not assigned</li><li>- Label required: Corrosive</li><li>- ADR/RID:New and spent batteries are exempt from all ADR/RID(special provision 598)</li></ul>
<b>Sea Transport</b>	Sea Transport (IMDG Code) <ul style="list-style-type: none"><li>- UN No UN2800</li><li>- Classification: Class 8</li><li>- Proper Shipping Name: Batteries, non-spillable electric storage</li><li>- Packing Group: III</li><li>- EmS: F-A, S-B</li><li>- Label required: Corrosive</li><li>- If non-spillable batteries meet the Special Provision 238, they are exempted from all IMDG codes provided that the batteries terminals are protected against short circuits</li></ul>
<b>Air Transport</b>	Air Transport (IATA-DGR) <ul style="list-style-type: none"><li>- UN No UN2800</li><li>- Classification: Class 8</li><li>- Proper Shipping Name: Batteries, non-spillable electric storage</li><li>- Packing Group: III</li><li>- Label required: Corrosive</li><li>- If non-spillable batteries meet the Special Provision A67, they are exempted from all IATA DGR codes provided that the batteries terminals are protected against short circuits</li></ul>

XCELL batteries comply in full with the above detailed transportation provisions and are classified as NON Dangerous

### **SECTION 15: Other information**

Products such as batteries are not in the scope of regulation which require the publication of an EU Safety Data Sheet ( 91/155/EEC).



The information given above is provided in good faith based on existing knowledge and does not constitute an assurance of safety under all conditions. It is the users responsibility to observe all laws and regulations applicable for storage, use maintenance or disposal of the product. If there are any queries, the supplier should be consulted.

However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.