



Pony Testing International Group

Report No.: MNI6BHLLT06791716

# MSDS Report

Sample Description  
& Model

Button lithium manganese battery CR2032

Applicant

CHANGZHOU JINYUE BATTERY CO.,LTD

Address

No.6 workshop, cailing science park, no.38 fenghuang  
road, tianning district, changzhou city, jiangsu



微信扫一扫，使用小程序 小程序扫一扫，在线验证

No.: MNI6BHLLT06791716

Code: x6y4yx



**PONY 谱尼测试**

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# Material Safety Data Sheet

Reference to ST/SG/AC.10/30/Rev.8 (GHS)

## Section 1 - Chemical Product and Company Identification

### Chemical Product Identification

**Sample Description:** Button lithium manganese battery**Sample Model:** CR2032**Recommended Uses:** N/A**Restrictions on Use:** N/A**Supplier Name:** CHANGZHOU JINYUE BATTERY CO.,LTD**Address:** No.6 workshop, cailing science park, no.38 fenghuang road, tianning district, changzhou city, jiangsu**Phone Number:** 0519-69186368**FAX:** 0519-69186358**E-mail:** 119421625@qq.com**Emergency Phone Number:** 0519-69186368

## Section 2 - Hazards Identification

**Emergency overview:** This product is a battery. Intended use of the product should not result in exposure to the chemical substance. In case of rupture the below hazards exist.

### Classification according to GHS

Acute toxicity, oral (4)

Acute toxicity, inhalation (4)

Skin corrosion/irritation (1A-1C)

Serious eye damage/eye irritation (1)

Sensitisation, skin (1, 1A, 1B)

Carcinogenicity (2)

Specific target organ toxicity, single exposure; Respiratory tract irritation (3)

Specific target organ toxicity, repeated exposure (2)

### Label elements

**Hazard pictogram(s):**





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**Signal word:** Danger**Hazard statement(s):**

H302 Harmful if swallowed

H332 Harmful if inhaled

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

H317 May cause an allergic skin reaction

H351 Suspected of causing cancer

H335 May cause respiratory irritation

H373 May cause damage to organs through prolonged or repeated exposure

**Precautionary statement(s):****Prevention:**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust, fume, gas, mist, vapours, spray.

P264 Wash skin and clothing thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves, protective clothing, eye protection, face protection.

**Response:**

P330 Rinse mouth.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water.

P363 Wash contaminated clothing before reuse.

P310 Immediately call a POISON CENTER.

P321 Specific treatment (See additional emergency instructions).

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302 + P352 IF ON SKIN: Wash with plenty of water.

**Storage**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

**Disposal:**

P501 Send contents to approved waste treatment plants.





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**Other hazards****Physical and chemical hazards:** See Section 10**Human health hazards:** See Section 11**Environmental hazards:** See Section 12

## Section 3 – Composition/Information on Ingredients

**Chemical characterization:** Mixture

Chemical Composition	CAS No.	EC#	Weight (%)
Iron	7439-89-6	231-096-4	50.83
Polypropylene	9003-07-0	618-352-4	3.76
Manganese dioxide	1313-13-9	215-202-6	30.96
Polytetrafluoroethylene resin	9002-84-0	618-337-2	2.17
Graphite	7782-42-5	231-955-3	2.17
Lithium	7439-93-2	231-102-5	1.91
Lithium Perchlorate	7791-03-9	232-237-2	4
1,2-Propanediolcyclic carbonate	108-32-7	203-572-1	3
Ethylene glycol dimethyl ether	110-71-4	203-794-9	1.2

## Section 4 - First Aid Measures

**Description of first aid measures****General information** No special measures required.**After eye contact**

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

**After skin contact**

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

**After inhalation**

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

**After swallowing**

Do not induce vomiting. Get medical attention.





**Personal protective equipment for first-aid responders:** No data available.

**Most important symptoms/effects, acute and delayed:** No data available.

**Indication of immediate medical attention and special treatment needed:** Treat symptomatically.

## Section 5 - Fire Fighting Measures

### Suitable extinguishing media:

Small Fire: Dry chemical, soda ash, lime or sand. Large Fire: DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn. Move containers from fire area if you can do it without risk.

### Unsuitable extinguishing media:

Water or foam.

### Specific Hazards arising from the chemical:

Special hazards arising from the substance or mixture

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Produce flammable gases on contact with water. May ignite on contact with water or moist air. Some react vigorously or explosively on contact with water. May be ignited by heat, sparks or flames. May re-ignite after fire is extinguished. Runoff may create fire or explosion hazard.

### Specific protective actions for fire-fighters:

Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## Section 6 - Accidental Release Measures

### Personal precautions:

As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids. Keep unauthorized personnel away. Stay upwind, uphill and/or upstream. Ventilate the area before entry.

### Protective equipment:

No data available.

### Emergency procedures:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Stop leak if you can do it without risk. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact





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spilled material. DO NOT GET WATER on spilled substance or inside containers. Small Spill: Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Dike for later disposal; do not apply water unless directed to do so. Powder Spill: Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

#### Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

#### Methods and materials for containment and cleaning up:

For all waste handling must refer to United Nations, National and Local Regulations for disposal.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## Section 7 - Handling and Storage

#### Precautions for safe handling:

Avoid short circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble. Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps.

#### Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

## Section 8 - Exposure Controls/Personal Protection

#### Control parameters

CAS No.	ACGIH	NIOSH	OSHA
7439-89-6	N/A	N/A	N/A
9003-07-0	N/A	N/A	N/A
1313-13-9	N/A	N/A	N/A
9002-84-0	N/A	N/A	N/A





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7782-42-5	TLV-TWA 2mg/m <sup>3</sup>	REL-TWA 2.5mg/m <sup>3</sup>	PEL-TWA 15mppcf PEL-TWA 20mppcf
7439-93-2	N/A	N/A	N/A
7791-03-9	N/A	N/A	N/A
108-32-7	N/A	N/A	N/A
110-71-4	N/A	N/A	N/A

#### Appropriate engineering controls:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

#### Personal Protective Equipment:

**Respiratory protection:** Wear suitable protective mask. For a large large number of battery leakages, wear chemical protective clothing, including self-contained breathing apparatus.

**Hand Protection:** Wear appropriate protective gloves to reduce skin contact.

**Eye Protection:** Wear safety goggles or eye protection combined with respiratory protection.

**Skin and Body Protection:** Working environment required, wear suitable protective clothing to minimize contact with skin. The type of protective equipment must be according to the concentration and the content of certain hazardous substances in the workplace.

## Section 9 - Physical and Chemical Properties

#### Information on basic physical and chemical properties

Colour:	Silver.
Physical State:	Button.
Odour:	Not available.
Odour threshold:	Not available.
pH:	Not available.
Melting point/freezing point:	Not available.
Initial boiling point and boiling range:	Not available.
Flash Point:	Not available.
Evaporation rate:	Not available.
Flammability (solid, gas):	Not available.





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Explosion Limits (vol% in air):	Not available.
Vapour pressure, kPa at 20°C:	Not available.
Vapor density:	Not available.
Density/Relative density (water = 1):	Not available.
Solubility(ies):	Not available.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Other information:	
Voltage	3.0V
Electric capacity	210mAh
Lithium metal content	0.05g

### Section 10 - Stability and Reactivity

**Reactivity:** No data available.

**Chemical stability:** Stable.

**Possibility of hazardous reactions:** No data available.

**Conditions to Avoid:** Flames, sparks, and other sources of ignition, incompatible materials.

**Incompatible materials:** Oxidizing agents, acid base.

**Hazardous decomposition products:** Carbon monoxide, carbon dioxide, lithium oxide fumes.

### Section 11 - Toxicological Information

**Acute Toxicity:**

CAS No.	LC50/LD50
7439-89-6	No data available.
9003-07-0	No data available.
1313-13-9	No data available.
9002-84-0	No data available.
7782-42-5	No data available.
7439-93-2	No data available.
7791-03-9	No data available.





108-32-7	LD50 Rat (oral): $\geq 29000$ mg/kg; LD50 Rabbit (Dermal): $> 20000$ mg/kg
110-71-4	LD50 Rat (oral): 2525mg/kg

**Skin corrosion/irritation:** No data available.

**Serious eye damage/irritation:** No data available.

**Respiratory or Skin sensitization:** No data available.

**Germ Cell mutagenicity:** No data available.

**Carcinogenicity:** No data available.

**Reproductive toxicity:** No data available.

**Specific target organ toxicity-Single exposure:** No data available.

**Specific target organ toxicity-Repeated exposure:** No data available.

**Aspiration hazard:** No data available.

**Information on the likely routes of exposure:** No data available.

**Eye:** No data available.

**Skin:** No data available.

**Ingestion:** No data available.

**Inhalation:** No data available.

## Section 12 - Ecological Information

### Ecological Toxicity:

CAS# 108-32-7

LC50:  $> 1000$  mg/L- Fish (Carp)-96h;

EC50:  $> 1000$  mg/L- Crustaceans (Daphnia magna)-48h;

EC50:  $> 900$  mg/L- Algae (Scenedesmus subspicatus) -72h

**Persistence and degradability:** No data available.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

**Other adverse effects:** No data available.

## Section 13 - Disposal Considerations

### Disposal methods:

### Recommendation:

Consult state, local or national regulations to ensure proper disposal.

### Uncleaned packaging





**Recommendation:** Disposal must be made according to official regulations.

## Section 14 - Transport Information

<b>UN Number</b>	
IATA	UN3090
IMDG	UN3090
<b>UN Proper shipping name</b>	
IATA	Lithium metal batteries
IMDG	LITHIUM METAL BATTERIES
<b>Transport hazard class(es)</b>	
IATA	9
IMDG	9
<b>Packing group</b>	
IATA	N/A
IMDG	N/A
<b>Packaging Sign</b>	
IATA	N/A
IMDG	N/A
<b>Environmental hazards</b>	
Marine pollutant:	No
<b>Special precautions for user</b>	No information available.

**Transport information:** The Button lithium manganese battery CR2032 has passed the test UN38.3, according to the report ID: MLI71QCU84520721.

According to the Packing Instruction 968 section II of IATA DGR 61<sup>th</sup> Edition for transportation, Cargo aircraft only.

According to the special provision 188 of IMDG (39-18), the goods are not subject to other provision of this code.

Separate batteries to prevent short-circuiting. and they should be packed in strong package during transport. Lithium cell or battery should incorporate a safety venting device or be designed to prevent a violent rupture under normal transport conditions. Keep away from high temperature and open flames.

**Transport Fashion:** By air, by sea.





## Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

CAS No.	TSCA	IECSC	DSL/NDSL	EINECS/ ELINCS/ NLP
7439-89-6	Listed	Listed	Listed DSL	Listed
9003-07-0	Listed	Listed	Listed DSL	Listed
1313-13-9	Listed	Listed	Listed DSL	Listed
9002-84-0	Listed	Listed	Listed DSL	Listed
7782-42-5	Listed	Listed	Listed DSL	Listed
7439-93-2	Listed	Listed	Listed DSL	Listed
7791-03-9	Listed	Listed	Listed DSL	Listed
108-32-7	Listed	Listed	Listed DSL	Listed
110-71-4	Listed	Listed	Listed DSL	Listed

## Section 16 - Other Information

Issue Date: 2020-01-03

Issue Department: Technical department

Modification record:

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Other Information:

CAS: (Chemical Abstracts Service);

EC: (European Commission);

ACGIH: (American Conference of Governmental Industrial Hygienists);

NIOSH: (US National Institute for Occupational Safety and Health);

OSHA: (US Occupational Safety and Health);





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TLV: (Threshold Limit Value)  
 TWA: (Time Weighted Average);  
 STEL: (Short Term Exposure Limit);  
 PEL: (Permissible Exposure Level);  
 REL: (Recommended Exposure Limit);  
 PC-STEL: (Permissible concentration-short time exposure limit);  
 PC-TWA: (Permissible concentration-time weighted average);  
 LC50: (Lethal concentration, 50 percent kill);  
 LD50: (Lethal dose, 50 percent kill);  
 IARC: (International Agency for Research on Cancer);  
 EC50: (Median effective concentration);  
 BCF: (Bioconcentration Factor);  
 BOD: (Biochemical oxygen demand);  
 NOEC: (No observed effect concentration);  
 NTP: (US National Toxicology Program);  
 RTECS: (Registry of Toxic Effects of Chemical Substances);  
 IATA: (International Air Transport Association);  
 IMDG: (International Maritime Dangerous Goods);  
 TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations);  
 TOC: (Total Organic Carbon);  
 TSCA: (Toxic Substances Control Act of USA);  
 DSL: (the Domestic Substances List of Canada);  
 NDSL: (the Non-domestic Substances List of Canada)

\*\*\*End of report\*\*\*



# Safety Data Sheet

Issuing Date: Nov. 1st, 2014

Revision Date: Oct. 25th, 2019

Revision Number 4

## 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>Valve Regulated Maintenance Free Lead-Acid Batteries: DJW, DJM, DJ, FT, LP, LPC, LPL, LPF, LPX, LPS, LDC, DTA, EV, GF, XP, XPE, XVP, PLH, PLC, PLX Series</b>
<b>Recommended Use</b>	Lead acid battery. Lead Acid (Non-spillable) Battery
<b>Supplier Address</b>	
Leoch Battery Corp	NOTE: Leoch Battery is considered an article as defined by 29 CFR 1910.1200 (OSHA Hazard Communication Standard).
19751 Descartes	The information supplied in this SDS is at the customer's request for information only.
Unit A	
Foothill Ranch, CA 92610	
Phone:800-424-9300	<b>Emergency Contact Number: 1-800-424-9300 CHEMTREC US &amp; CANADA ONLY</b>
Fax:949-588-5966	
Contact: Paul Yu	
Email: paulyu@leoch.us	
Contact Phone:949-588-5853	

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

NOTE: Under normal conditions of battery use, internal components will not present a health hazard. The following information is provided for battery acid and lead exposure that may occur during battery production or container breakage or under extreme heat conditions such as fire. In case of rupture, Corrosive The product causes burns of eyes, skin and mucous membranes

**Appearance:** No information available.

**Physical State:** Solid.

**Odor:** Odorless

	<b>Potential Health Effects</b>
<b>Principle Routes of Exposure</b>	Skin contact.
<b>Acute Toxicity</b>	Oral, dermal, inhalation: Category 4
<b>Eyes</b>	Cause serious eye damage. Category 1
<b>Skin</b>	Causes burns, corrosion, irritation. Category 1A Harmful by inhalation. Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns. Category 4
<b>Inhalation</b>	Harmful if swallowed. Can burn mouth, throat, and the rest of digestive tract. Category 4
<b>Ingestion</b>	Category 1A
<b>Reproductive</b>	Category 1B
<b>Carcinogenicity</b>	Category 2
<b>Specific Target Organ Toxicity (repeated Exposure)</b>	Lead compounds may be absorbed by ingestion, by inhalation and through the skin. Lead may damage kidney function, the blood forming system and the reproductive system. Avoid repeated exposure.
<b>Chronic Effects</b>	
<b>Main Symptoms</b>	Severe exposures can lead to shock, circulatory collapse, and death Lead



poisoning is characterized by a metallic taste in the mouth, loss of appetite indigestion, nausea, vomiting, constipation, sleep disturbances and overall weakness



**Aggravated Medical Conditions**

None known.

**Environment Hazard**

Toxic to aquatic life with long lasting effects. Aquatic Chronic 1, Aquatic Acute 1

Label Elements:

Health	Environmental	Physical
		
<p><b>Hazard Statements</b>  <b>DANGER!</b>            Causes severe skin damage            Causes serious eye damage.            Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure            May damage fertility or the unborn child if ingested or inhaled.            May cause cancer if ingested or inhaled.            Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure.</p>	<p><b>Precautionary Statements</b>            Wash thoroughly after handling.            Do not eat, drink or smoke when using this product.            Wear protective gloves/protective clothing, eye protection/face protection.            Avoid breathing dust/fume/gas/mist/vapors/spray.            Use only outdoors or in a well-ventilated area.            Causes skin irritation, serious eye damage.            Contact with internal components may cause irritation or severe burns. Avoid contact with internal acid.            Irritating to eyes, respiratory system, and skin.</p>	

**HMIS Rating for Sulfuric Acid:**

Health: 3 Flammability: 0 Reactivity: 2 Other: 0

**NFPA Rating for Sulfuric Acid:**

Health: 3 Flammability: 0 Reactivity: 2 Other: 0

Rating Codes: 0 = Insignificant, 1 = Slight, 2=Moderate, 3 = High, 4 = Extreme

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Lead/Lead Compounds	7439-92-1	65~75
Sulfuric acid	7664-93-9	10~20
ABS resin	9003-56-9	~10
Tin	7440-31-5	<0.5
Calcium	7440-70-2	<0.1

### 4. FIRST AID MEASURES

**General Advice**

First aid is upon rupture of sealed battery.

**Eye Contact**

Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.



<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
<b>Inhalation</b>	Move to fresh air. Call a physician or Poison Control Center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
<b>Ingestion</b>	Immediate medical attention is required. Call a physician or Poison Control Center immediately. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down.
<b>Notes to Physician</b>	Treat symptomatically.
<b>Protection of First-aiders</b>	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

## 5. FIRE-FIGHTING MEASURES

<b>Flammable Properties</b>	Not flammable.
<b>Flash Point</b>	Not determined.
<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Uniform Fire Code</b>	Corrosive: Acid-Liquid
<b>Hazardous Combustion Products</b>	Hazardous metal fumes and oxides.
<b>Explosion Data Sensitivity to Mechanical Impact</b>	No.
<b>Sensitivity to Static Discharge</b>	No.
<b>Specific Hazards Arising from the Chemical</b>	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**      **Health Hazard 3**      **Flammability 0**      **Stability 2**      **Physical and Chemical Hazards**

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not get in eyes, on skin, or on clothing.
<b>Environmental Precautions</b>	Refer to protective measures listed in Sections 7 and 8.
<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for Cleaning Up</b>	In case of rupture: Use personal protective equipment. Dam up. Soak up with inert absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly.
<b>Other Information</b>	Refer to protective measures listed in Sections 7 and 8.



## 7. HANDLING AND STORAGE

**Handling** Handle in accordance with good industrial hygiene and safety practice.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup>	TWA: 50 µg/m <sup>3</sup> Action Level: 30 µg/m <sup>3</sup> Poison, See 29 CFR 1910.1025	IDLH: 100 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup>
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic fraction	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>
Tin 7440-31-5	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> Sn except oxides (vacated) TWA: 2 mg/m <sup>3</sup>	IDLH: 100 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value.

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits.

NIOSH IDLH: Immediately Dangerous to Life or Health.

**Other Exposure Guidelines** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir. , 1992).

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems

### Personal Protective Equipment

**Eye/Face Protection**

Tightly fitting safety goggles.

**Skin and Body Protection**

Wear protective gloves/clothing.

**Respiratory Protection**

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** No information available  
**Odor Threshold** No information available  
**pH** No information available  
**Flash Point** No information available.  
**Decomposition Temperature** No information available  
**Melting Point/Range** No information available  
**Flammability Limits in Air** No information available  
**Water Solubility** Immiscible in water  
**Evaporation Rate** No information available  
**Vapor Density** No data available

**Odor** Odorless.  
**Physical State** Solid  
**Auto-ignition Temperature** No information available  
**Boiling Point/Range** No information available  
**Explosion Limits** No information available  
**Solubility** No information available  
**Vapor Pressure** No data available  
**Partition Coefficient: noctanol/water**



## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Stable under recommended storage conditions.
<b>Incompatible Products</b>	Incompatible with strong acids and bases. Incompatible with oxidizing agents.
<b>Conditions to Avoid</b>	Exposure to air or moisture over prolonged periods.
<b>Hazardous Decomposition Products</b>	Thermal decomposition can lead to release of toxic/corrosive gases and vapors
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

<b>Product Information</b>	Product does not present an acute toxicity hazard based on known or supplied information.
<b>Irritation</b>	Causes severe irritation and or burns

### Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid	= 2140 mg/kg ( Rat )	-	= 510 mg/m3( Rat ) 2 h

### Chronic Toxicity

**Chronic Toxicity** Lead compounds may be absorbed by ingestion, by inhalation and through the skin. Lead may damage kidney function, the blood forming system and the reproductive system. Avoid repeated exposure.

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Lead	A3	Group 2A	Reasonably Anticipated	X
Sulfuric acid	A2	Group 1	Known	X
ABS resin		Group 3		

**ACGIH: (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC: (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

**NTP: (National Toxicity Program)**

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

**OSHA: (Occupational Safety & Health Administration)**

X - Present

<b>Reproductive Toxicity</b>	Product is or contains a chemical which is a known or suspected reproductive hazard.
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<b>Developmental Toxicity</b>	Contains ingredients that have suspected developmental hazards. Inorganic lead compounds can cause developmental damage.
<b>Target Organ Effects</b>	None known.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Lead		LC50: 0.44 mg/L (96 h semi-static) Cyprinus carpio LC50: 1.17 mg/L (96 h flow-through) Oncorhynchus mykiss LC50: 1.32 mg/L (96 h static) Oncorhynchus mykiss		EC50: 600 µg/L (48 h ) water flea
Sulfuric acid		LC50: > 500 mg/L (96 h static) Brachydanio rerio		EC50: 29 mg/L (24 h ) Daphnia magna

## 13. DISPOSAL CONSIDERATIONS

<b>Waste Disposal Methods</b>	This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Should not be released into the environment.
<b>Contaminated Packaging</b>	Do not re-use empty containers.
<b>US EPA Waste Number</b>	D002 D008

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Lead - 7439-92-1	(hazardous constituent - no waste number)	Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K064, K065, K066, K069, K086, K100, K176	= 5.0 mg/L regulatory level	

### California Hazardous Waste Codes 792

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California EHW	California Carc	California Hazardous Waste	California Waste - Part 2
Lead			Toxic	TCLP (for CA Toxicity): 5.0 mg/L
Sulfuric acid			Toxic Corrosive	
Calcium	Ignitable Reactive			



## 14. TRANSPORT INFORMATION

Note: Transportation requirements do not apply once the battery pack has been installed in an equipment as part of the equipment's functional components.

Transportation: Absorptive Glass-Fiber Material Lead Acid Battery is not a DOT Hazardous Material

Other: Per DOT, IATA, ICAO, and IMDG rules and regulations, these batteries are exempt from "UN2800" classification as a result of successful completion of the following tests:

- 1.) Vibration tests
- 2.) Pressure Differential Tests
- 3.) Case Rupturing Tests (no free liquids)

<b>Note:</b>		Exempt from hazardous materials regulations per 49CFR173.159 (d).
<b>DOT</b>	<b>Description</b>	NOT REGULATED NON-SPILLABLE BATTERY
<b>TDG</b>	<b>Description</b>	Not regulated NON-SPILLABLE BATTERY
<b>MEX</b>	<b>Description</b>	Not regulated NON-SPILLABLE BATTERY
<b>ICAO Description</b>		Not regulated NON-SPILLABLE BATTERY
<b>IATA</b>	<b>Description</b>	Not regulated NON-SPILLABLE BATTERY
<b>IMDG/IMO Description</b>		Not regulated NON-SPILLABLE BATTERY

## 15. REGULATORY INFORMATION

### International Inventories

<b>TSCA</b>	Complies
<b>DSL</b>	Not determined

### U.S. Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) . This product contains a chemical or chemicals that are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Lead	7439-92-1	65~75	0.1
Sulfuric acid	7664-93-9	10~20	1.0

<b>SARA 311/312 Hazard Categories</b>	<b>Acute</b>	Yes
<b>Health Hazard</b>		Yes
<b>Chronic Health Hazard</b>		Yes
<b>Fire Hazard</b>		No
<b>Sudden Release of Pressure Hazard</b>		No
<b>Reactive Hazard</b>		No

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Lead		X	X	

Sulfuric acid	1000 lb			X
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**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product contains the following substances that are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Lead	7439-92-1	65~75				

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Lead	10 lb	
Sulfuric acid	1000 lb	1000 lb

**U.S. State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	California Prop. 65
Lead	7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive
Sulfuric acid	7664-93-9	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Lead	X	X	X	X	X
Tin	X	X	X		
Calcium	X	X	X		
Sulfuric acid	X	X	X	X	X

**International Regulations**

**Mexico - Grade** Minimum risk, Grade 0

Chemical Name	Carcinogen Status	Exposure Limits
Lead	A3	Mexico: TWA= 0.15 mg/m3
Tin		Mexico: TWA 2 mg/m3 Mexico: STEL 4 mg/m3
Sulfuric acid	A2	Mexico: TWA 1 mg/m3

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class**

D2A Very toxic materials E Corrosive material





Chemical Name	NPRI
Lead	X
Sulfuric acid	X

**Legend**

NPRI - National Pollutant Release Inventory

**16. OTHER INFORMATION**

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**General Disclaimer**

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End of Safety Data Sheet