

**Huizhou Huiderui Lithium Battery Technology Co., LTD.****Material Safety Data Sheet (MSDS)**

**Huizhou Huiderui Lithium Battery Technology Co., LTD.--Lithium Manganese Dioxide Primary Battery, Non-rechargeable, Part Number/Trade Name: Lithium Manganese Dioxide Battery**

**Desay Lithium Manganese Dioxide Battery Safety Data Sheet**

**Product Name:** Lithium Manganese Dioxide Battery

**Type:** CR123A

**Volts:** 3.0V

**Trade Name:** Huizhou Huiderui Lithium Battery Technology Co., LTD.

**Chemical System:** Lithium Manganese Dioxide

**Designed for Recharge:** No

**Section I - General Information Item**

**Name:** Battery, Non-rechargeable

**Company's Name:** Huizhou Huiderui Lithium Battery Technology Co., LTD.

**Company's Street:** No. 67, Hechang West 3rd Road, Zhongkai Hi-Tech Development Zone

**Company's City:** HUIZHOU, GUANGDONG

**Company's Country:** CHINA

**Company's Zip Code:** 516006

**Company's Emergency Phone Number:** (0086) - 752-2652138

**Company's Information Phone Number:** (0086) - 752-2652968

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**Data MSDS Prepared:** 1 Jan. 2014

**Website:** [www.huiderui.com](http://www.huiderui.com)

**E-Mail:** [wangzp@huiderui.com](mailto:wangzp@huiderui.com)

**Hours of Operation:** 8:30 am to 17:30 pm Mon. through Fri.

**Section II - Composition/Hazardous Ingredients**

**IMPORTANT NOTE:** The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.



MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	wt.(g)/pct
<b>Active material:</b>			
Manganese Dioxide (CAS Number:1313-13-9)	5 mg Mn/m <sup>3</sup> Ceiling	5 mg Mn/m <sup>3</sup>	6.10/38.12%
Lithium Metal (CAS Number:7439-93-2)	Not established	Not established	0.50/3.12%
Lithium Perchlorate (CAS Number:7791-03-9)	Not established	Not established	1.93/12.06%
1,3-dioxolane(DOL) (CAS Number:646-06-0)	Not established	Not established	unknown
(CAS Number:108-32-7) Propylene Carbonate(PC)	Not established	Not established	unknown
(CAS Number:110-71-4) Dimethoxyethane(DME)	Not established	Not established	unknown
Water	/	/	0.0016/0%
<b>Inert material:</b>			
(CAS Number: 1333-86-4) Acetylene black	3.5 mg/m <sup>3</sup> TWA(as carbon black)	3.5 mg/m <sup>3</sup> TWA(as carbon black)	0.48/3.00%
Graphite (CAS Number: 7782-42-5)	5 mg/m <sup>3</sup> TWA (respirable fraction) 15 mg/m <sup>3</sup> TWA (total dust)	2 mg/m <sup>3</sup> TWA (respirable fraction)	0.14/0.87%
(CAS Number:9002-84-0) Adhesive	Not established	Not established	0.21/1.31%
polypropylene (CAS Number:9003-07-0)	Not established	Not established	0.31/1.94%
Iron(Fe)	/	/	5.19/32.43%
(CAS Number: 7440-02-0)Nickel-plate	1mg[Ni]/m <sup>3</sup>	0.05mg/m <sup>3</sup> [Ni]	0.032/0.20%
Aluminum (Al) (CAS Number:7429-90-5)	10mg/m <sup>3</sup> (dust)	5mg/m <sup>3</sup> (smog)	0.39/2.44%
(CAS Number:9002-86-2) Polyvinyl chloride(PVC)	Not established	Not established	0.72/4.50%
<b>Heavy metal:</b>			
(CAS Number:7439-97-6) Hydrargyrum(Hg)	0.1mg/m <sup>3</sup>	0.0025mg[Hg]/m <sup>3</sup>	<0.000016
(CAS Number:7439-92-1) Lead(Pb)	Not established	0.05mg/m <sup>3</sup>	<0.000016
(CAS Number:7440-43-9) Cadmium(Cd)	Not established	0.01mg/m <sup>3</sup>	<0.000032

### Section III - Physical/Chemical Characteristics

**Appearance and Odor:** Battery-Odorless

**Specific Gravity:** Not Relevant

**Decomposition Temperature:** Unknown

**Evaporation Rate and Ref.:** Not Relevant

**Solubility in Water:** Not Relevant

**Viscosity:** Not Relevant

**Radioactivity:** Not Relevant

#### **Section IV - Fire And Explosion Hazard Data**

**Flash Point:** None

**Lower Explosive Limit:** Not Relevant

**Upper Explosive Limit:** Not Relevant

**Extinguishing Media:** For burning Battery in Bulk Quantities of Unpacked Cells, Use Class D Extinguishers; Lith-X, Powdered Graphite.

**Special Fire Fighting Proc:** No Water, Sand, Carbon Dioxide, Soda-Acid or Halogenated Extinguishers. Wear Self Contained Breathing Apparatus & Full Protective Clothing.

#### **Section V -Reactivity Data**

**Stability:** Product is stable.

**Condition to Avoid (Stability):** Fire, Heat, Moisture, Recharge, Disassemble

**Materials to Avoid:** Water with Internal Contents

**Hazardous Poly Occur:** No

**Conditions to Avoid (Poly):** Not Relevant

#### **Section VI-Health Hazard Data**

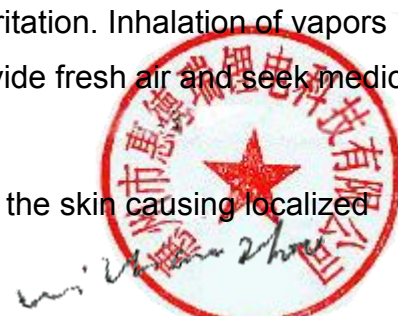
Under normal conditions of use, the battery is hermetically sealed.

**LD50-LC50 Mixture:** Not Applicable

**Inhalation:** Contents of an open battery can cause respiratory irritation. Inhalation of vapors may cause irritation of the upper respiratory tract and lungs. Provide fresh air and seek medical attention.

**Skin Absorption:** DOL, PC and DME may be absorbed through the skin causing localized inflammation.

**Ingestion:** Swallowing a battery can be harmful. Contents of an open battery can cause



serious chemical burns of mouth, esophagus, and gastrointestinal tract. If battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately.

**Health Haz Acute and Chronic:** No exposure is normally expected. Electrolyte is immobilized and completely secured within battery. If battery is opened, acute & chronic-electrolyte(DME) is slightly to moderately toxic. May cause eye, skin & mucous membranes irritation.

**Carcinogenicity-NTP:**No

**Carcinogenicity-IARC:**No

**Carcinogenicity-OSHA:** No

**Explanation Carcinogenicity:** Not Applicable

**Signs/Symptoms of Overexp:** None, If broken or in fire: Irritation

**Medical Conditions Generally Aggravated by Exposure:** An acute exposure will not generally aggravate any medical condition.

**Emergency/First Aid Procedures:–Eyes/skin:** Flush with plenty of water. See do not induce vomiting. Give milk of magnesia. See doctor immediately.

### Section VII-Precautions for Safe Handling and Use

**Steps if Material Released/Spill:** If battery is opened, ventilate area, avoided contact with electrolyte, wear protective gloves, and place in container filled with oil and wrap tightly in polyethylene bag.

**Neutralizing Agent:** None specified by manufacturer.

**Waste Disposal Method:** Consult your local environmental officer. Bury in ground,3 feet deep. Do not incinerate. Dispose of in accordance with federal, state and local environmental regulations.

**Precautions-Handling/Storing:** Store in cool place, away from heat and open flames. Elevated temperature can result in shortened battery life. Prevent condensation on batteries.

**Other Precautions:** Do not recharge, disassemble, heat above 212F, incinerate or expose contents to water. Battery contents are a fire, explosion and severe burn hazard.

### Section VIII-Control Measures

**Respiratory Protection:** Not necessary under normal conditions of use. Wear self-contained breathing apparatus when large numbers of cells are involved in a fire. Ventilation: Adequate

**Protective Gloves:** Rubber gloves

**Eye Protection:** Safety goggles



**Other Protective Equipment:** None normally required. Protective clothing as needed if contact is expected.

**Work Hygienic Practices:** If contacted with opened battery, wash thoroughly after contacted.

### Section IX-Disposal

Lithium batteries are best disposed as a non-hazardous waste when fully or mostly discharged. The Federal Environmental Protection Agency (EPA) (governed by the Resource Conservation and Recovery Act (RCRA)) do not list or exempt lithium as a hazardous waste. However, if waste lithium batteries are still fully charged or only partially discharged, they can be considered a reactive hazardous waste because of significant amounts of unreacted lithium in the battery. The batteries must be neutralized through an approved secondary treatment facility prior to disposal as a hazardous waste(as required by the U.S. Land Ban Restrictions for the hazardous and Solid Waste Amendments of 1984.)Secondary treatment centera receive these batteries as manifested hazardous waste under code"D003-reactive."Use a professional disposal firm for disposal of mass quantities of undischarged lithium batteries.

### Section X-Transportation Data

They are considered non-dangerous goods by the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) because they meet all requirements of Packing instruction Section II of PI968, PI969 and PI970 for lithium metal batteries in the 55<sup>th</sup> Edition of the IATA DGR. and get passed the UN38.3 test. The cargo can fulfill SP 188 requirements of IMDG Code 2010. Separate Lithium batteries when shipping to prevent short-circuiting. The right label will be pasted on each carton.



### Section XI-Passenger Aircraft

#### Ban (for batteries only)

Effective December 29, 2004, all primary lithium batteries are banned as on passenger aircraft. In addition this rule requires that the outside of each package that contains primary lithium batteries, regardless of size or number of batteries, be labeled with the following statement :"**PRIMARY LITHIUM BATTERIES-FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT**".

Document Information

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