Eentitech Battery Co.，LTD.

Material Safety Data Sheet(MSDS)

Eentitech Battery Co.，LTD.一 Lithium Manganese Dioxide Primary Battery，N0nrechargeabIe Part Number／Trade Name：Lithium Manganese Dioxide Battery

Eentitech Manganese Dioxide Bakery Safety Data Sheet

Product Name：Eentitech Battery Co．LTD.
Type：CRl 23A
Volts：3 0V
Trade Name：Lithium Manganese Dioxide Baffery
Chemical System：Lithium Manganese Dioxide
Designed for Recharge：No

Section I-GeneralJnformation

Item Name：Battery，NOnrechargeabIe
Company's Name：Eentitech Battery Co.. LTD.
Company's Street：Fu' an 2'nd Leliu Shunde Foshan Guangdong China
Company's City：FOSHAN
Company's Province：GUANGDONG
Company's Country：CHINA
Company's Zip Code：528322
Company's Emergency Phone Number：(086)一 0757—25528031
Company's Information Phone Number：(086)一 0757—25528036
Company's Fax Number：(086)一 0757—25523621
Data MSDS Prepared：9September2005
Internet：www.entitech.cn
E-Mail:zczhong@126.com
Hours of Operation：8：30 am tO 1 7：30 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)	TL-V(ACGIH)	％／wt
Active materiaI：			
Manganese Dioxide (CAs number：1313-13-9)	5 mg Mn／m3 Celling	5 mg Mn／m3	38.10
Lithium MetaI (CAS Number：7439-93-2)	Not established	Not established	3.10
Lithium Perchlorate (CAS Number：7791—03-9)	Not established	Not established	12.06
1．3-dioxolane(DOL) (CAS Number：646-06-0)	Not established	Not established	unkown
Propylene Carbonate(PC) (CAS Number：1 08-32-7)	Not established	Not established	unkown
Dimethoxyethane(DME) (CAS Number：1 1 0-71-4)	Not established	Not established	unkown
Water	/	/	0.01
nert material:			
Acetylene black (CAS Number:1333-86-4)	3.5 mg/m3 TWA(as carbon black)	3.5 mg/m3 TWA(as carbon black)	3.03
Graphite (CAS Number：7782-42-5)	5 mg／m3 TWA(respirable fraction) 1 5 mg／m3．TWA(total dust)	2 mg／m3 TWA (respirable fraction)	0.87
Adhesive (CAS Number：9002-84-0)	Not established	Not established	1.30
polypropylene (CAS Number：9003-07-0)	Not established	Not established	1.91
I ron(Fe):			
Nickel—plate (CAS Number：7440—02-0)	1mg[Ni]m3	0.05mg[Ni]m3	0.2
Aluminium(AI) (CAS Number：7429-90-5)	10 mg／m3(dust)	5 mg／m3(smog)	2.46
Polyvinyl chloride(PVC) (CAS Number：9002-86-2)	Not established	Not established	4.48
Heavy metal：			
Hydrargyrum(Hg) (CAS N umber：7439-97-6)	0．1 mg／m3	0．0025mg[Hg]／m3	<0．0001
Lead(Pb) (CAS Number：7439-92-1)	Not established	0．05mg／m3	<0．0001
Cadmium(Cd) (CAS Number：7440-43-9	Not established	0．01 mg／m3	<0．0002

Section lII-Physical / Chemical Characteristics

Appearance And Odor：Battery—Odorless

Specific Gravity：Not Relevant

Decomposition Temperature：Unknown

Evaporation Rate And Ref.：Not Relevanf

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 B reathing 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 I ntemaI Contents

Hazardous Poly Occur：No

Conditions To AV0id(P0ly)：Not Relevant

Section Vl-Health Hazard Data

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

LD50 — LC50 Mixture：Not Applicable Inhalation：Contents of an open baRery 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 se rious chemical burns of mouth，esophagus，and gastrOintestinaI 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 secu red within battery. If battery is opened，acute&chronic-eIectrolyte(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 genera Tly aggravate any medical condition.
Emergency / First Aid Procedures：
一 **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，avoide contact with electrolyte，wear protective gloves，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 21 2F，incinerate or expose contents lO water Battery contents are a fire，explosion and severe burn hazard.

Section vlll-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.
Vent_lation：Adeauate Protective G10ves：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 lX—Disposal

Lithium batteries are best disposed as a non—hazardous waste when fully or mostly discharged The Federal Envi ronmental P rotection 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 1 984.)Secondary treatmenl 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(1CAO)and the International Air Transport Association(IATA)because they meet all requirements of Special P rovision A45.

Separate Lithium batteries when shipping to prevent shOrt-circuiting. They should be packed in strong packaging for support during transport.

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 fhe 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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