



TITANIUM INNOVATIONS

Material Safety Data Sheet (MSDS)

Lithium Manganese Dioxide Primary Battery, Non-rechargeable

Part Number/Trade Name: Titanium Innovations CR123A Battery

Product Name: Titanium Innovations CR123A 3V Photo Lithium Battery

Type: CR123A

Volts: 3.0V

Trade Name: Lithium Manganese Dioxide Battery

Chemical System: Lithium Manganese Dioxide

Designed for Recharge: No

Section 1 - General Information Item

Name: Battery, Non-rechargeable

Company's Name: Titanium Innovations

Company's Street: 50 School House Rd Unit 2

Company's City: Old Saybrook, CT

Company's Country: USA

Company's Zip Code: 06475

Company's Emergency Phone Number: CHEMTREC 800-424-9300

Company's Information Phone Number: 860-581-4540

Company's Fax Number: 240-524-2571

Data MSDS Prepared: 1 Jan. 2012

Website: www.titaniuminnovations.com

E-Mail: sales@titaniuminnovations.com

Hours of Operation: 9:00am to 5:00pm, EST. Mon. through Fri.

Section 2 - 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)
Active material:			
Manganese Dioxide (CAS Number:1313-13-9)	5 mg Mn/m3 Ceiling	5 mg Mn/m3	6.10
Lithium Metal (CAS Number:7439-93-2)	Not established	Not established	0.50
Lithium Perchlorate (CAS Number:7791-03-9)	Not established	Not established	1.93
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
Inert material:			
(CAS Number: 1333-86-4) Acetylene black	3.5 mg/m3 TWA(as carbon black)	3.5 mg/m3 TWA(as carbon black)	0.48
Graphite (CAS Number: 7782-42-5)	5 mg/m3 TWA (respirable fraction) 15 mg/m3 TWA (total dust)	2 mg/m3 TWA (respirable fraction)	0.14
(CAS Number:9002-84-0) Adhesive	Not established	Not established	0.21
polypropylene (CAS Number:9003-07-0)	Not established	Not established	0.31
Iron(Fe)	/	/	5.19
(CAS Number: 7440-02-0)Nickel-plate	1mg[Ni]/m3	0.05mg/m3[Ni]	0.032
Aluminum (Al) (CAS Number:7429-90-5)	10mg/m3(dust)	5mg/m3(smog)	0.39
(CAS Number:9002-86-2) Polyvinyl chloride(PVC)	Not established	Not established	0.72
Heavy metal:			
(CAS Number:7439-97-6) Hydrargyrum(Hg)	0.1mg/m3	0.0025mg[Hg]/m3	<0.000016
(CAS Number:7439-92-1) Lead(Pb)	Not established	0.05mg/m3	<0.000016
(CAS Number:7440-43-9) Cadmium(Cd)	Not established	0.01mg/m3	<0.000032

Section 3 - 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 4 - 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 5 - 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 6 - 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. Do not induce vomiting. Give milk of magnesia. See doctor immediately.

Section 7 - 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 8 - 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 9 - 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 centers 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 10 -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 (for Lithium Metal Batteries UN3090), PI969 (for Lithium Metal Batteries packed with equipment UN3091) or PI970 (for Lithium Metal Batteries contain in equipment UN3091) and pass the UN38.3 test. The cargo can fulfil SP188, 230,310,957 requirements of IMDG Code (34-08). Separate Lithium batteries when shipping to prevent short-circuiting. The right label will be pasted on each carton.



Section 11 - Passenger Aircraft Ban (for batteries only)

Effective December 29, 2004, all primary lithium batteries are banned 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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