

Material Safety Data Sheet

Date of Issue: |Revision Date: Apr. 1, 2013|Revision Number: YCRE-PSDS--01
Imperial Supplies Part Number: 0052680

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form:

Product Name: Manganese dioxide lithium battery

CAS No:

Synonyms:

1.2. Intended Use of the Product

Use of the substance/mixture:

1.3. Name, Address, and Telephone of the Responsible Party
Company

Panasonic Corporation, Automotive & Industrial Systems Company

Energy Device Business Division

1-1 Matsushita-cho, Moriguchi City, Osaka, 570-8511, Japan

Phone: +81-6-6994-4537

1.4. Emergency Telephone Number

Emergency | +81-6-6991-1141

number |

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Not applicable. |

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) | | | | |

Signal Word (GHS-US) |

Hazard Statements (GHS-US) |

Precautionary Statements |

(GHS-US) |

2.3. Other Hazards

Other Hazards Not Contributing to the Classification:

2.4. Unknown Acute Toxicity (GHS-US)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Name	Product identifier	%	Classification
			(GHS-US)

Full text of H-phrases: See Section 16

3.2. Mixture

Name	Product identifier	%	Classification
			(GHS-US)
Positive electrode	1313-13-9	25~45	
Manganese dioxide			
Negative electrode	7439-93-2	2~ 5	
Lithium metal			
Electrolyte			
1,2- dimethoxyethane	110-71-4	3~ 5	
Organic electrolyte	-	5~17	

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General:

First-aid Measures After Inhalation: Remove to fresh air immediately. Take a medical treatment.

First-aid Measures After Skin Contact: Wash the contact areas off immediately with plenty of water and soap. If appropriate procedures are not taken, this may cause sores on the skin.

First-aid Measures After Eye Contact: Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing. Take a medical treatment. If appropriate procedures are not taken, this may cause an eye irritation.

First-aid Measures After Ingestion:

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/Injuries:

Symptoms/Injuries After Inhalation:

Symptoms/Injuries After Skin Contact:

Symptoms/Injuries After Eye Contact:

Symptoms/Injuries After Ingestion:

Chronic Symptoms:

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Alcohol-resistant foam and dry sand are effective.

Unsuitable Extinguishing Media:

5.2. Special Hazards Arising From the Substance or Mixture
Fire Hazard:

Explosion Hazard:

Reactivity:

5.3. Advice for Firefighters

Precautionary Measures Fire:

Firefighting Instructions:

Protection During Firefighting:

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Take up with absorbent cloth. Move the battery away from the fire.

6.1.1. For Non-emergency Personnel

Protective Equipment:

Emergency Procedures:

6.1.2. For Emergency Responders
Protective Equipment:

Emergency Procedures:

6.2. Environmental Precautions

6.3. Methods and Material for Containment and Cleaning Up
For Containment:

Methods for Cleaning Up:

6.4. Reference to Other Sections
See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together. Use strong material for packaging boxes so that they will not be damaged by vibration, impact, dropping and stacking during their transportation. Do not recharge batteries. Do not deform batteries. Do not mix different type of batteries. Do not solder directly onto batteries. Do not let water penetrate into packaging boxes during their storage and transportation.

Hygiene Measures:

7.2. Conditions for Safe Storage, Including Any Incompatibilities
Technical Measures:

Storage Conditions: Do not store the battery in places of the high temperature or under direct sunlight or in front of a stove.

Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, water drop or not to store it under frozen condition. Fire fighting apparatus should be installed.

7.3. Specific End Use(s)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters
(In case of electrolyte leakage from the battery).

Acceptable concentration: Not specified in ACGIH.

Facilities: Provide appropriate ventilation system such as local ventilator in the

storage Place.

Protective clothing: Gas mask for organic gases, safety goggle, and safety glove.

8.2. Exposure Controls

Appropriate Engineering	
Controls	
Personal Protective Equipment	
Materials for Protective	
Clothing	
Hand Protection	
Eye Protection	
Skin and Body Protection	
Respiratory Protection	
Thermal Hazard Protection	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	
Appearance	Cylindrical shape
Odor	
Odor Threshold	
pH	
Relative Evaporation Rate	
(butylacetate=1)	
Melting Point	
Freezing Point	
Boiling Point	
Flash Point	
Auto-ignition Temperature	
Decomposition Temperature	
Flammability (solid, gas)	
Vapor Pressure	

Relative Vapor Density at 20 Å°C	
Relative Density	
Specific Gravity	
Solubility	
Partition coefficient:	
n-octanol/water	
Viscosity	
Lower Flammable Limit	
Upper Flammable Limit	

9.2. Other Information

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Since batteries utilize a chemical reaction they are actually considered a chemical product. As such, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, the various usage conditions such as discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage.

10.2 Chemical Stability

10.3 Possibility of Hazardous Reactions

10.4 Conditions to Avoid

10.5 Incompatible Materials

10.6 Hazardous Decomposition Products

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity: Oral(rat) LD50 > 2,000mg/kg (estimated) .

Skin Corrosion/Irritation: Irritating to skin.

Serious Eye Damage/Irritation: Irritating to eye.

Respiratory or Skin Sensitization:

Germ Cell Mutagenicity:

Carcinogenicity:

Reproductive Toxicity:

Specific Target Organ Toxicity (Single Exposure):

Specific Target Organ Toxicity (Repeated Exposure):

Aspiration Hazard:

Symptoms/Injuries After Inhalation:

Symptoms/Injuries After Skin Contact:

Symptoms/Injuries After Eye Contact:

Symptoms/Injuries After Ingestion:

Chronic Symptoms: Not specified.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

In case of the worn-out battery was disposed in land, the battery case may be corroded, and leak electrolyte. But, we have no ecological information.

12.2. Persistence and Degradability

12.3. Bioaccumulative Potential

12.4. Mobility in Soil

12.5. Other Adverse Effects

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: When the battery is worn out, dispose of it under the ordinance of each local government or the law issued by relating government.

Additional Information:

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name |

Hazard Class | <PICTOGRAM PHRASE>

Identification Number |

Label Codes |

ERG Number |

14.2 In Accordance with IMDG

Proper Shipping Name |

Hazard Class |

Identification Number|

Label Codes | <PICTOGRAM PHRASE>

ntification Of The |

Substance/m |

EmS-No. (Fire) |

EmS-No. (Spillage) |

14.3 In Accordance with IATA

Proper Shipping Name |Lithium metal batteries

Identification Number|UN3090 |<PICTOGRAM PHRASE>

Hazard Class |Class9 |

Label Codes |

ntification Of The |

Substance/m |

ERG Code (IATA) |

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

<COMPONENT>

IATA Dangerous Goods Regulations

ICAO Technical Instructions for the safe transport of dangerous goods by air.

SARA Section 311/312 Hazard Classes |

Toxic Substances Control Act (TSCA) |

15.2 US State Regulations

<COMPONENT>

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date |Apr. 1, 2013

Other |This document has been prepared in accordance with the SDS

Information |requirements of the OSHA Hazard Communication Standard 29 CFR

|1910.1200.

GHS Full Text Phrases:

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