MSDS REPORT

Applicant : Shenzhen Deanda Technology Co., Ltd.

Address : Third floor, A3 building, Hongjingwei Technology Park, No. 47 Dongxin Avenue, Dongjiang high tech Zone, Huizhou City

The following sample information is supplied by the customers:

Product Name : Buckle type lithium manganese battery

Model : CR1220, CR1616, CR2016, CR2025, CR2032, CR1632, CR1625, CR1620, CR2450, CR2430

Trade Mark : DEANDA

Manufacturer : Shenzhen Deanda Technology Co., Ltd.

Address : Third floor, A3 building, Hongjingwei Technology Park, No. 47 Dongxin Avenue, Dongjiang high tech Zone, Huizhou City

******FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)******

Signed for and on behalf of

Jiangsu 3E-TEST Technology Co., Ltd

Prepared by:	Reviewed by:	Approved by:
Alisa, Wang	Kris, Tao	Irwin, Dong
Project Engineer	Project Leader	Technical Director

MATERIAL SAFETY DATA SHEET
(according to ISO 11014: 2009)

SECTION 1: Identification of Product and Supplier

Product Name: Buckle type lithium manganese battery
Sample Model No.: CR1220, CR1616, CR2016, CR2025, CR2032, CR1632, CR1625, CR1620, CR2450, CR2430

Manufacturer: Shenzhen Deanda Technology Co., Ltd.
Address: Third floor, A3 building, Hongjingwei Technology Park, No. 47 Dongxin Avenue, Dongjiang high tech Zone, Huizhou City
Emergency contact: luxuehua
Emergency telephone number: 086-18807520489

SECTION 2: Hazards Identification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured.

Classification of the substance or mixture.
Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008
This substance is no classified as dangerous according to Directive 67/548/EEC.

Label elements
The product does not need to be labeled in accordance with EC directives or respective national laws

Other hazards:
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition / Information on Ingredients

Substance or preparation : Preparation
Information about the chemical nature of product :

Common chemical name / General name	CAS number	Concentration / Concentration range	Classification and hazard labeling
Manganese dioxide(MnO_2)	1313-13-9	31%	Health: 2 Flammability: 0 Reactivity: 0
Lithium(Li)	7439-93-2	4%	Health: 3 Flammability: 3 Reactivity: 2
Steel (Fe)	7439-89-6	65%	Health: 1 Flammability: 2 Reactivity: 1

SECTION 4: First Aid Measures

Only in case of contact with internal components of the battery:

Skin contact : Wash off skin thoroughly with water.

Eye contact : Immediately flush eyes with water continuously for at least 15 minutes.

Inhalation : If breathed in, move person into fresh air.
If not breathing, give artificial respiration.

Ingestion : Never give anything by mouth to an unconscious person. Rinse mouth with in water.

SECTION 5: Fire Fighting Measures

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture: Corrosive gas may be emitted during fire

Special Fire Fighting Procedures: Self-contained breathing apparatus.

Advice for firefighters: Wear self contained breathing apparatus for fire fighting if necessary

Further information: no data available

SECTION 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal

Reference to other sections

For disposal see section 13

SECTION 7: Handling and Storage

The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.
Do not short circuit terminals, or recharge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

Precautions
Avoid mechanical or electrical abuse.
DO NOT short circuit or install incorrectly.
Batteries may explode, pyrolize or vent if disassembled, crushed, recharged or exposed to high temperatures.
Install batteries in accordance with equipment instructions.
Do not mix battery systems, such as alkaline and zinc carbon, in the same equipment.
Replace all batteries in equipment at the same time.
Do not carry batteries loose in a pocket or bag.
Do not remove battery tester or battery label.

Storage:
Store batteries in a dry place at normal room temperature.
Do not refrigerate this will not make them last longer.

SECTION 8: Exposure Controls / Personal Protection

The following occupational exposure limits are provided for informational purposes. No exposure to the battery components should occur during normal consumer use.

Chemical Name	Exposure Limits
Manganese Dioxide	5 mg/m^3 Ceiling OSHA PEL 0.2 mg/m^3 TWA ACGIH TLV

Ventilation: No special ventilation is needed for normal use.
Respiratory Protection: None required for normal use.
Skin Protection:
None required for normal use.
Use neoprene, rubber or latex gloves when handling leaking batteries.
Eye Protection:
None required for normal use.
Wear safety goggles when handling leaking batteries.

SECTION 9: Physical and Chemical Properties
Appearance:
-Physical state: Solid
-Appearance: Cylindrical shape.

-Color: Depend on the design
-Odor: Odorless
-pH: N/A
-Specific temperatures/temperature ranges at which changes in physical state occur:
There is no useful information for the product as a mixture.
-Flash point: N/A
-Explosion properties: N/A
-Density: N/A
-Solubility ,with indication of the solvent(s): Insoluble in water
-Voltage: 3.0 Volts

SECTION 10: Stability and Reactivity

Stability: Stable under normal use
Conditions to avoid: Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit or recharge.
Materials to avoid: Conductive materials, water, seawater, strong oxidizers and strong acids.
Hazardous decomposition products: Thermal decomposition may produce hazardous fumes of zinc and manganese; and other toxic by-products.

SECTION 11: Toxicological Information

Acute Toxicity Data:
Manganese Dioxide: LD50 oral rat >3478 mg/kg
Chronic Effects: The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery.
Target Organs: Skin, eyes and respiratory system.
Carcinogenicity: None of the components of this product are listed as carcinogens by ACGIH, IARC, NTP or OSHA.

SECTION 12: Ecological Information

Toxicity: No data available
Persistence/ degradability: Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment.
Persistence and degradability: no data available
Bioaccumulative potential: no data available
Mobility in soil: no data available
Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects: no data available

SECTION 13: Disposal Consideration

Recommended methods for safe and environmentally preferred disposal:
Product (waste from residues) : Do not throw out a used battery cell. Recycle it through the recycling company.
Contaminated packaging: Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

SECTION 14: Transport Information

International transport regulations:
1. U.S hazardous materials regulations pursuant to 49 CFR 173. 185(b)
2. 2021 IATA Dangerous Goods Regulations 62st edition
3. IMDG Code pursuant to Special Provision 188(39-18)

UN-NO: 3090~-3091

The Lithium metal Batteries implies w the current edition-62st 2021 of the IATA regulation:
1) Section II of Packing Instruction
Pi968-Pi970, For Lithium metal cells or batteries, or packed with equipment, or contained in equipment.
2) UN manual of Tests and Criteria, Part III, sub-section 38.3(withstanding a 1.2 m drop test)
3) For cells with content of lithium is no more than 20Wh, for batteries with content of lithium is no more than 100Wh per battery. The watt- hour rating must be marked on outside of the battery case.

The Lithium metal Batteries must be packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits.

Note:
The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment:
1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations.
2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185.
3. The transport of primary lithium batteries is prohibited aboard passenger aircraft.
Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule) Lithium batteries shipped as"Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT:
UN-No. UN3090
Proper Shipping Name: Lithium metal batteries
Hazard Class: 9
Packing Group: II
Marine Pollutant: This product contains a chemical which is listed as a severe marine pollutant according to DOT
Description: UN3090 , LITHIUM METAL BATTERIES, 9, II
Emergency Response Guide Number: 147

IATA/ ICAO:
UN-No.: 3090
Proper Shipping Name: Lithium metal batteries
Transport Hazard Class: 9
Packing Group: II
Description: UN3090 or UN3091, Lithium metal Battery, 9, II,
UN3090, P.I. 968, Section II , a shipper is not permitted to present for transport more than one (1) package prepared according to Section II in any single consignment.
UN3091, P.I. 969, Section II when the batteries ship by themselves and there are 2 or less shipping in the same carton.
UN3091, P.I. 970, Section II when the batteries are contained in equipment (crimpers) and there are more than 2 in the same carton.

IMDG/ IMO:
UN-No.: 3090 (for lithium metal batteries) or 3091(For lithium metal batteries contained in equipment or Lithium metal batteries packed with equipment)
Proper Shipping Name: Lithium metal batteries
Transport Hazard Class: 9
Packing Group: II
Description: UN3090 or UN3091, Lithium metal Battery, 9, II

MEX:
UN-No.: UN3090
Proper Shipping Name: LITHIUM METAL BATTERIES
Hazard: Class 9
Packing: Group II
Description: UN3090, LITHIUM METAL BATTERIES, 9, II

RID:
UN-No.: UN3090
Proper Shipping Name: LITHIUM METAL BATTERIES

Hazard: Class 9
Classification code: M4
Description: UN3090, LITHIUM METAL BATTERIES, 9, II

ADR:
UN-No.: UN3090
Proper Shipping Name: LITHIUM METAL BATTERIES
Hazard Class: 9
Packing Group: II
Classification code: M4
Tunnel restriction code: (E)
Description: UN3090, LITHIUM METAL BATTERIES BATTERIES, 9, II

ADN:
UN-No.: UN3090
Proper Shipping Name: LITHIUM METAL BATTERIES
Hazard Class: 9
Packing Group: II
Classification code: M4
Special Provisions: 188, 230, 310, 636
Description: UN3090, LITHIUM METAL BATTERIES, 9, II
Limited Quantity: 0

SECTION 15: Regulation Information

International Inventories:
TSCA Complies
DSL All components are listed either on the DSL or NDSL.
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations:
SARA 355 (extremely hazardous substances): None of the ingredients is listed.
SARA 313 (Specific toxic chemical listings): None of the ingredients is listed.
TSCA (Toxic Substances Control Act): None of the ingredients is listed.

U.S. State Regulations
California Proposition 65
Chemicals known to cause cancer: None of the ingredients is listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients is listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients is listed.

Chemicals known to cause developmental toxicity: None of the ingredients is listed.

Carcinogenic categories:

EPA (Environmental Protection Agency): None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH): None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health): None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration): None of the ingredients is listed.

GHS label elements: Void

Hazard pictograms: Void

Signal word: Void

Hazard statements: Void

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

International Regulations:

Canada: WHMIS Hazard Class: Non-hazardous

EU Directive 2006/66/EC

The International Civil Aviation Organization (ICAO) Technical Instructions

The International Air Transport Association (IATA) Dangerous Goods Regulations (62st Edition (Year 2020))

The International Maritime Dangerous Goods (IMDG) Code (2020 Edition) : special provision 188,

The UN Recommendations on the Transport of Dangerous Goods Model Regulations and the Manual of Tests and Criteria. The UN classification number: Class 9, UN3090 / UN3091.

SECTION 16: Other Information

NFPA **:** Health Hazard: 1 Flammability: 0 Instability: 0
Physical and Chemical Hazards: -

HMIS **:** Health Hazard: 0 Flammability: 0 Physical Hazard: 0
Personal Protection: X

Further information

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.

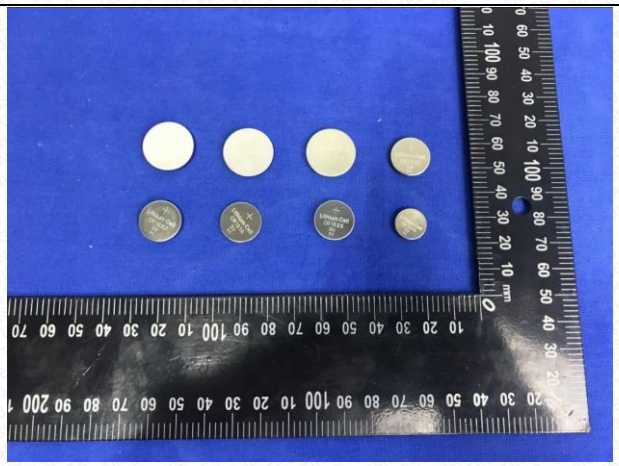
Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use.

This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

MSDS REPORT

Photo of Sample



End of Report