

Material Safety Data Sheet(MSDS)

Report No.: BCT130221A05

Date: Mar 21st, 2013 Revision: 2.0

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Applicant : Shenzhen Lidea Battery Co., Ltd.

Address : 3/F, No.5 Bldg., Houhai Xufa Tech. Park, Loucun, Gongming Town,
Shenzhen, China.

Sample name : Li-Mn Battery

Model : CR927, CR1025, CR1130, CR1216, CR1220, CR1225, CR1616, CR1620,
CR1632, CR2016, CR2025, CR2032, CR2050, CR2320, CR2325,
CR2330, CR2335, CR2354, CR2430, CR2450, CR2477, CR2477T

Receive Date : 2013-02-21

Completion Date : 2013-02-26

Service specifications : Material safety data sheet(MSDS) for the product

Summary : The contents and format of this MSDS are in accordance with Regulation
29 CFR 1910.1200(g)

BCT
Bontek Compliance Testing

Authorized signature



Lab Manager



2013-02-26

Note: This report is only responsible for the tested sample(s) from the client. Without the writing agreement of the company, the client is not allowed to copy the report in part (entire copy is excepted).

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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name : Li-Mn Battery
 Product Model : CR927, CR1025, CR1130, CR1216, CR1220, CR1225, CR1616, CR1620, CR1632, CR2016, CR2025, CR2032, CR2050, CR2320, CR2325, CR2330, CR2335, CR2354, CR2430, CR2450, CR2477, CR2477T
 Company name : Shenzhen Lidea Battery Co., Ltd.
 Contact person : Pasion He
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 Emergency telephone : +86-755-23410092
 E-mail : sales@lideabattery.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization

Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

Item Type	Manganese dioxide (MnO ₂) wt%	Graphite (C) wt%	Poly(tetrafluoroethylene) (PTFE) wt%	Polypropylene (pp) wt%	Stainless steel wt%	Lithium wt%	Propylene carbonate (PC) wt%	Dimethoxy ethane (DME) wt%	Lithium perchlorate (LiClO ₄) wt%
CAS No.	1313-13-9	7782-42-5	9002-84-0	9003-07-0	12597-68-1	7439-93-2	108-32-7	110-71-4	7791-03-9
EC No.	215-202-6	231-955-3	206-370-1	--	--	231-102-5	203-572-1	203-794-9	232-237-2
CR927	26.6	2.2	0.2	7.0	51.9	2.2	3.9	4.1	1.9
CR1025	27.4	2.7	0.2	7.2	50.6	2.1	4.0	3.8	2.0
CR1130	27.3	2.9	0.2	7.2	50.2	2.1	4.1	3.9	2.1
CR1216	25.7	2.4	0.2	7.3	52.3	1.6	4.3	4.1	2.1
CR1220	26.3	2.6	0.2	7.7	50.8	1.5	4.5	4.2	2.2
CR1225	27.9	2.7	0.2	5.0	52.0	1.5	4.4	4.2	2.1
CR1616	21	1.6	0.2	3.6	61.6	1.3	4.4	4.2	2.1
CR1620	25.1	2.3	0.2	4.6	56.3	1.3	4.2	4.0	2.0
CR1632	31.7	3.1	0.3	5.5	46.5	1.8	4.7	4.2	2.2
CR2016	25.4	3.1	0.2	4.1	54.2	1.1	4.6	4.1	3.2
CR2025	26.2	2.5	0.2	3.4	55.4	1.7	4.5	4.0	2.1
CR2032	31.7	2.6	0.3	3.9	48.8	2.0	4.5	4.1	2.1
CR2050	27.1	2.8	0.2	4.7	52.7	1.4	4.5	4.1	2.5
CR2320	27.3	2.7	0.2	5.4	52.5	1.3	4.6	3.7	2.3
CR2325	28.2	2.8	0.2	5.2	51.1	1.5	5.0	3.8	2.2
CR2330	30.9	3.0	0.2	4.9	47.9	1.6	5.7	4.0	1.8
CR2335	32.1	3.5	0.3	4.6	46.8	1.9	5.3	3.8	1.7

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CR2354	46.5	4.7	0.4	3.0	34.0	2.1	4.6	3.2	1.5
CR2430	32.8	3.2	0.2	3.6	49.5	1.6	4.5	3.2	1.4
CR2450	46.9	4.6	0.2	3.2	33.1	2.2	4.9	2.9	2.0
CR2477	52.3	5.3	0.4	2.0	25.8	3.0	5.6	3.4	2.2
CR2477T	52.6	5.4	0.5	1.5	23.9	3.5	6.2	3.8	2.6

3. HAZARDS IDENTIFICATION

Hazard description

Information pertaining to particular dangers for man and environment.

The product has to be labelled due to the calculation procedure of international guidelines.

Irritating to skin

Risk of serious damage to eyes.

May cause sensitisation by inhalation and skin contact.

Classification system:

The classification was made according to the latest editions of international substances list, and expanded upon from company and literature data.

NFPA ratings(scale 0-4)

Health=2

Fire=2

Reactivity=0

HMS-ratings(scale 0-4)

Health= *2

Fire=2

Reactivity=0

4. FIRST AID MEASURES

After eye contact: Rinse opened eye for several minutes under running water, Then consult a doctor.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After inhalation: Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation

After swallowing: If symptoms persist consult doctor.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing agents:

CO₂, extinguishing power or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use fire fighting measure that suit the environment.

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caused by the material, its products of combustion or resulting gases, emits toxic fumes under fire conditions.
Protective equipment: wear self-contained respiratory protective device.

6. ACCIDENTAL RELEASE MEASURES

Person-related safety precautions: wear protective equipment, keep unprotected persons away.
Measure for environmental protection: Do not allow to enter sewers/surface or ground water.
Measure for cleaning/collecting: dispose contamination material as according to item.

7. HANDLING AND STORAGE

Handling

Information for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of dust.

Information about protection against explosions and fires:

Keep ignition sources away.

Storage

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility:

Do not store together with oxidizing and acidic materials.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7.

Additional information: The lists that were valid during the making were used as basis.

Personal protective and hygienic measure:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and contaminated clothing.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Breathing equipment:

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In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

The glove material has to be impermeable and resistant to the product/the substance/the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Tightly sealed goggles

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information	
Form:	solid
Color:	silvery white
Odor:	monotony
Change in condition	
Melting point/Melting range:	not available
Boiling point/Boiling range:	not available
Flash point:	not applicant
Flammability(solid, gaseous)	not available
Ignition temperature:	not available
Auto Ignition:	Product is not selfigniting
Danger of explosion: product does not present an explosion hazard.	
Explosion limits:	
Lower:	not available
Upper:	not available
Oxidizing properties:	not available

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Vapor pressure:	not available
Density:	not available
Relative of density:	not available
Evaporation rate:	not available
Solubility in / Miscibility with Water:	not available
pH-value:	not available
Viscosity:	not available

10. STABILITY AND REACTIVITY

Thermal decomposition / conditions to be avoided: No decomposition: if used according to specifications.

Dangerous reactions: No dangerous reactions reactions known

Dangerous products of decomposition: No dangerous decomposition products known

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Primary irritant effect:

On the skin: Irritant to skin and mucous membranes.

On the eye: strong irritant with the danger of severe eye injury.

Sensitization:

Sensitization possible through inhalation

Sensitization possible through skin contact

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations.

Harmful

Irritant

12. ECOLOGICAL INFORMATION

General notes:

Water hazard class 1: slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13. DISPOSAL CONSIDERATIONS

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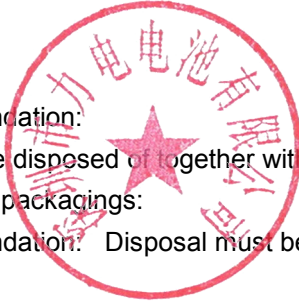
Product:

Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.



14. TRANSPORT INFORMATION

DOT regulations:

Hazard class :

9

Identification number :

UN3090

Packing group :

II

Proper shipping name (technical name): Li-Mn Battery (Lithium Metal Battery)

Label:

9

Land transport ADR/RID (cross-border)

ADR/RID class: 9 Miscellaneous dangerous substances and articles

Danger code (Kemler):

9

UN-Number:

3090

Packaging group:

II

Description of goods:

3090 Li-Mn Battery (Lithium Metal Battery)

Maritime transport IMDG:

IMDG Class:

9

UN Number:

3090

Label:

9

Packaging group:

II

Marine pollutant:

Yes

Proper shipping name:

Li-Mn Battery (Lithium Metal Battery)

Air transport ICAO-TI and IATA-DGR:

UN/ID Number:

3090

Label:

9

Packaging group:

II

Proper shipping name:

Li-Mn Battery (Lithium Metal Battery)

Packing instructions:

PI968-PI970

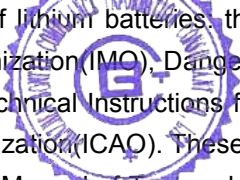
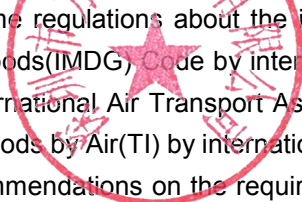
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There are some regulations about the international transport of lithium batteries, the international Maritime Dangerous Goods(IMDG) Code by international Maritime Organization(IMO), Dangerous Goods Regulations (DGR) by international Air Transport Association(IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air(TI) by international Civil Aviation organization(ICAO). These regulation are based on the UN Recommendations on the requirements of UN 38.3(UN Manual of Test and Criteria, Part subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group hazardous goods.

15. REGULATORY INFORMATION

Sara

Section 355(extremely hazardous substances)

None of the ingredient is listed.

Section 313(specific toxic chemical listings):

None of the ingredient is listed.

Proposition 65

Chemical known to cause cancer

None of the ingredient is listed.

Chemical known to cause reproductive toxicity for females

None of the ingredient is listed.

Chemical known to cause reproductive toxicity for males

None of the ingredient is listed.

Chemicals known to cause developmental toxicity:

None of the ingredient is listed.

Carcinogenicity categories

EPA (Environmental Protection Agency).

None of the ingredient is listed.

IARC(International Agency for Research on Cancer)

None of the ingredient is listed.

NTP(National Toxicology Program)

None of the ingredient is listed.

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TLV(Threshold limit values established by ACGIH)

None of the ingredient is listed.

NIOSH-Ca(National Institute for Occupational Safety and Health)

None of the ingredient is listed.

OSHA- Ca(Occupational Safety & Health Administration)

None of the ingredient is listed.

Product related hazard informations

The product has been classified and marked in accordance with directives on hazardous material.

Hazard symbol:

Harmful

Hazard-determining components of labelling:

Lithium Cobalt(III)oxide

Risk phrases:

Irritating to skin.

Risk of serious damage eyes

May cause sensitisation by inhalation and skin contact

Safety phrases:

Keep locked up and out of the reach of children.

Do not breathe dust.

Avoid contact with skin and eyes.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately(show the label where possible).

Dispose of this material and its container to hazardous or special waste collection point.

In case of accident by inhalation: remove casualty to fresh air and keep at rest.

16. OTHER INFORMATION

The contents and format of this MSDS is in according with 29 CFR 1910.1200(g)

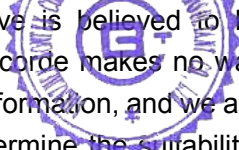
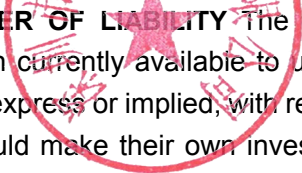
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