Applicant: Zhengzhou Dison Electric Co., Ltd.

Address: Room 1309, Building 6, Greenland Metropolis, Intersection of Jinshui East Road and Dongfeng South Road, Zhengdong New District, Zhengzhou City

Sample information:

Sample name: Medicine cooler(lithium battery)

Model: /

Sample composition/raw material (supplied by client): Refer to section 3 of the SDS"Composition/Information on Ingredient"

Edit period: From December 28, 2018 to January 2, 2019

Required service : As specified by the client, to prepare Safety Data Sheet (SDS) by the submitted sample information.

Summary : As specified by the client, This safety data sheet was prepared in accordance with UN GHS Rev.7 and US OSHA Hazard Communication Standards (29 CFR 1910.1200). Please refer to the attached report for details.

Digitally signed by Bolea Petru
Date: 2022.04.29 15:19:05 EEST
Reason: MoldSign Signature
Location: Moldova

Shanghai Fajin Testing Technology Co.,Ltd

Prepared by: Cao Haley

Approved by:

Reviewed by: He Li

Date: 2019.1.2

Safety Data Sheet
(SDS)

In accordance with OSHA Hazard Communication Standards 2012 (29 CFR 1910.1200) and GHS Rev. 7

Section 1 - Chemical Product and Company Identification

1.1 Product Identification:

Product Name:	Medicine cooler (lithium battery)
Product Model:	/
Nominal voltage:	3.7V, 7.4V, 7.4V
Rated capacity:	150mAh, 6800mAh,16000mAh

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses:	Medicine cooler (lithium battery)
Use advised against:	Abuse and short circuits,etc. for more information refer to Section 7.

1.3 Details of the Manufacture or supplier

Manufacture:	Zhengzhou Dison Electric Co., Ltd.
Address:	Room 1309, Building 6, Greenland Metropolis, Intersection of Jinshui East Road and Dongfeng South Road, Zhengdong New District, Zhengzhou City
Telephone:	+86-371-60311611
Fax:	+86-371-60311612
Email:	admin@disonel.com

1.4 Emergency telephone number

Emergency Telephone:	+86-371-60311611

Section 2 - Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with OSHA Hazard Communication Standards (29 CFR 1910.1200) :

Not applicable. As a solid, manufactured article, exposure to hazardous ingredients is not expected with normal use.

2.2 Additional Hazards:

Battery is considered as sealed non-spillable one. Under normal operating conditions, the materials sealed inside should not be hazardous to people's health.

But when these materials exposed during production or under case broken condition or being extremely heated (fired), they may be hazardous to people's health: Skin contact with electrolyte solution causes severe skin burns and eye damage, and causes damage to organs through prolonged or repeated exposure.

See section 11 for more detailed information on health effects and symptoms.

Section 3 - Composition/Information on Ingredient

Substance () Preparation () Article (√)

Description: The battery is contained in a hermetically-sealed case(Outer shell), designed to withstand temperatures and pressures encountered during normal use. So during normal use, hazardous materials are fully contained inside the battery.

Composition:

Chemical name	CAS No.	Content (%)	GHS classification
Lithium Cobalt Oxides($LiCoO_2$)	12190-79-3	25-35	Repr. 2, H361
Graphite (C)	7782-42-5	15-20	Not classified.
Polyvinylidene Fluoride(PVDF)	24937-79-9	1-5	Not classified.
Acetylene Black	1333-86-4	0.5-3	Not classified.
Aluminum foil(Al)	7429-90-5	21-23	Not classified.
Copper foil(Cu)	7440-50-8	10-11	Not classified.
Electrolyte($LiPF_6$)	21324-40-3	10-15	Acute toxicity, Oral (Category 3), H301 Skin corrosion (Category 1A), H314 STOT-RE, Inhalation (Category 1), Bone, Teeth, H372

Abbreviation: CAS No. is Chemical Abstract Service Registry Number.

Section 4 - First Aid Measures

4.1 Description of first aid measures:

Measures at accidental release of electrolyte solution

Inhalation: Move person into fresh air. Rinse mouth with water. Wash nose and throat. If breathing is difficult, give oxygen. If not breathing give artificial respiration. Get medical attention.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation occurs and persists, contact a doctor.

Skin Contact: Remove contaminated clothing. Wash off with soap and plenty of water. If irritation occurs and persists, contact a doctor.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with

water. Consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Section 5 -Extinguishing media

5.1 Extinguishing media

Suitable extinguishing media:

In case of fire where batteries are present, use extinguishing media such as sand, dry ground dolomite, dry chemical, CO2 or flood the area with water. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out.

5.2 Special hazards arising from the substance or mixture

Battery may explode when exposed to fire. In case of fire, the following can be released: Carbon monoxide, Carbon dioxide, Other irritating and toxic metal oxides gases.

5.3 Advice for firefighters

Firefighters should wear self-contained breathing apparatus and full fire-fighting gear if necessary. Fight fire from a distance or protected area.

5.4 Further information

Avoid contaminated water to release to drains or waterways.

Section 6 - Accidental Release Measures

For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

6.1 Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all fire sources. Safety glasses and neoprene or natural rubber gloves should be worn when cleaning up damaged or leaking batteries. Avoid inhaling vapor, gas and dusts. Avoid direct contact with skin and eyes. Keep unnecessary personnel away from the immediate area.

6.2 Environmental precautions:

Keep away of drains. Do not release into the environment.

6.3 Methods and materials for containment and cleaning up:

Damaged batteries that are not hot or venting should be placed in a sealed plastic bag or container. Absorb any spilled liquid with inert material. Dispose of waste as in Section 13.

Section 7 - Handling and Storage

7.1 Precautions for safe handling:

Follow normal battery safety precautions.
Do not dismantle, open or shred secondary cells or batteries.Do not disassemble, crush or burn cell or battery.
Avoid handling in a way that would cause a short circuit.
Do not expose cells or batteries to heat or fire. Avoid storage in direct sunlight.
Do not subject cells or batteries to mechanical shock.
Battery usage by children should be supervised.
If the battery case is damaged, avoid contact with the internal components of the battery.

7.2 Conditions for safe storage, including any incompatibilities:

Store batteries at room temperature in dry area away from direct sunlight.
Do not store in a manner that would cause the terminals to short circuit.
Keep away from fire, sparks and heat.
Avoid damage to battery case. Keep batteries in original packaging until use and do not jumble them.
Keep away from flammable, organic solvents, reducing agents, strong oxidizing agent, acid, alkali and water.
Do not storage Lithium-ion Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.
Keep out of reach of children.

Section 8 - Exposure Controls, Personal Protection

8.1 Exposure Limits: Not established.

8.2 Exposure controls

Engineering Control: General industrial hygiene practice. Batteries that have not been damaged do not require any special engineering controls. In production or battery have been damaged, ensure enough ventilation. Provide eye wash and safety shower in work place.

Personal protective equipment:

Respiratory Protection: None required for normal use. If leaked, wear self-absorption filter respirators or air respirator. In case of emergency rescue or evacuation, recommends wearing oxygen respirator.

Eyes Protection: None required for normal use. Wear safety goggles when handling leaking batteries.

Body Protection: Not required under normal conditions. When handling leaking batteries, wear suitable protective equipment to avoid skin contact.

Hands Protection: None required for normal use. Use protective gloves when handling leaking batteries.

Other Protections: Use only as directed. Workers should wash hands and face before eating, drinking and smoking.

Remove contaminated clothing and protective equipment before entering eating areas. Wash contaminated clothing before reusing.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties	
Appearance	Solid
Odor	Odorless
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability	Not flammable.
Upper explosive limit % (V/V)	Not available.
Lower explosive limit % (V/V)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Product is not self-igniting.
Decomposition temperature	Not available.
Viscosity	Not available.

Section 10 - Stability and Reactivity

10.1 Stability: Stable under recommended storage and handling and transport conditions.

10.2 Conditions to Avoid: Strong heating, fire, Incompatible materials. Do not dismantle, open or shred batteries.

10.3 Incompatible materials: Keep away from flammable, organic solvents, reducing agents, strong oxidizing agent, acid, alkali and water.

10.4 Hazardous Decomposition Products: No decomposition if used according to specifications. In the event of fire:see section 5.

10.5 Possibility of hazardous reactions: None under normal processing.

Section 11 - Toxicological Information

Acute Toxicity:	Lithium hexafluorophosphate21324-40-3: LD50 Oral - Rat - female - > 50 - 300 mg/kg (OECD Test Guideline 423)
Skin Corrosion/Irritation:	Lithium hexafluorophosphate21324-40-3: Skin - Human Result: Causes severe burns. (Skin corrosion: Human Skin Model Test)
Serious Eye Damage/Eye Irritation:	Lithium hexafluorophosphate21324-40-3: Causes severe eye damage.
Respiratory or Skin Sensitization	Based on available data, the classification criteria are not met.
Germ Cell Mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity:	Lithium hexafluorophosphate21324-40-3: IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans. Cobalt lithium manganese nickel oxide: suspect of cause cancer.
Reproductive Toxicity:	Based on available data, the classification criteria are not met.
Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System):	No known human health effects upon single exposure.
Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System):	Lithium hexafluorophosphate21324-40-3: Causes damage to organs (Bone, Teeth) through prolonged or repeated exposure if inhaled.
Aspiration Hazard:	Based on available data, the classification criteria are not met.
Potential Health Effects:	
Inhalation:	Inhaled opened batteries may stimulate the respiratory tract.
Oral:	In the case of ingestion of lithium batteries, the battery may lead to chemical burns and the esophagus serious burns in a short time, if the accident occurs, immediately find the nearest doctor to diagnose, do not induce vomiting by unexpected person.
Skin contact:	Exposure to opened battery internal electrolyte can cause skin burning.
Eye contact:	If the eyes are inadvertently exposed to the battery, the internal electrolyte can cause eye irritation or burns.

Section 12 - Ecological Information

12.1 Toxicity

No data available..

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No bioaccumulative potential

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

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.

12.6 Other adverse effects

When properly used or disposed, the batteries do not present environmental hazard. Since some internal materials remain in the environment, do not bury or throw out into the environment..

Section 13 - Disposal Considerations

Waste treatment methods

Must not be disposed together with household garbage.
Do not allow product to reach sewage system.
Offer surplus and non-recyclable products to a licensed disposal company. Observe according to the national and local related regulations.

Section 14 - Transport Information

If battery meet the required of following items, can be transported by non hazardous goods.

1) When The Battery had passed the test items of UNITED NATIONS “recommendations on the transport of dangerous goods’ manual of tests and Criteria ST/SG/AC.10/11/Rev.6, 38.3.

The Battery with a Watt-hour rating not exceeding 100Wh, according to the requirements of section Ⅱ of packing instructions 967 of 60th of DGR Manual of IATA(2019 edition) for transportation.

The Battery with a Watt-hour rating in excess of 100Wh, according to the requirements of section 1 of packing instructions 967 of 60th of DGR Manual of IATA(2019 edition) for transportation.

2) Meets requirements of International Maritime Dangerous Goods(IMDG) CODE(Amdt. 38-16)2016 edition Special Provision 188 to be transported as non-dangerous goods;

3) Meets the requirements of 49CFR173.185 to be transported as non-dangerous goods for road, rail, air, and vessel.

4) Meets the requirements of TDG special provision 34 to be transported as non-dangerous goods.

5) The package must be handled with care and that a flammability hazard exists if the package is damaged.

If battery does not meet the required of above items, should be transported as UN 3481 as following.

UN Number: 3481

UN proper shipping name: LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries)

Transport hazard class(es): 9

Packing group: Not applicable

Environmental hazards: No

Special precautions for user: In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a batteries. Please refer to Section 7-HANDLING AND STORAGE also.

Section 15 - Regulatory Information

EU Regulations

These batteries are no substances or preparations according to Regulation(EC) No1907/2006 EC. Instead they have to be regarded as articles, no substances are intended to be released during handling. Therefore there is no obligation to supply a MSDS according to Regulation(EC) 1907/2006, Article 31.

US Regulations

Material Safety Data Sheets (MSDS) are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Sub part 1910.1200. This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an “article”. OSHA has defined “article” as a manufactured item other than a fluid particle; (i) which is formed to a specific shape or defined during manufacture; (ii) which has end use function(s) dependent in whole or part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of hazardous chemical, and does not pose a physical hazard or health risk to employees.
Because all of our batteries are defined as “articles”, they are exempted from the requirements of the Hazard Communication Standard.

Section 16 - Additional Information

Abbreviations:

pH-	Relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline

OSHA-	Occupational Safety and Health Administration
NTP-	National Toxicilogy Program
IARC-	International Agency for Research on Cancer
CAS#-	Chemical Abstract Service number - used to uniquely identify chemical compounds
ACGIH-	The American Conference of Governmental Industrial Hygienists
ADR-	Agreement on Dangerous Goods by Road
IATA -	International Air Transport Association
IMDG-	International Maritime Dangerous Goods

Further Information:

-This safety data sheet was prepared in accordance with UN GHS Rev.7 and US OSHA Hazard Communication Standards (29 CFR 1910.1200).

-The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. 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.

Department Issuing SDS: Zhengzhou Dison Electric Co., Ltd.

Issue Date: January 2, 2019

End of SDS