DESAY 德赛电池

Issue date: 2025/01/01

Reference No: DS-2025/01/01

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Products Name	Rechargeable Li-ion Battery
Manufacture Name	Desay Battery Co.,Ltd
Address	No.15, ZhongKai, High-Tech Industry Development Zone, HuiZhou, Guangdong China.
Postcode	516006
Emergency Telephone No.	0752-2629750
Fax	0752-2629808
E-mail	Weigc_dc@desay.com
Battery Model	GLE28
GPN	Pack: G823-00590-00 / Cell: G823-00591-00
BATTERY RATING	18.36Wh
MSDS Code	DS-20250101-01
Date Prepared	2025/01/01

Section 2. Composition/Information on Ingredients

Component	CAS No.	EC No.	%/wt.
Cobalt lithium dioxide	12190-79-3	235-362-0	15-40
Ethyl propionate	105-37-3	203-291-4	15-40
Copper foil	7440-50-8	231-159-6	10-30
Aluminum foil	7429-90-5	231-072-3	10-30
Graphite	7782-42-5	231-955-3	7-25
Ethylene Carbonate	96-49-1	202-510-0	0-15
Propylene Carbonate	108-32-7	203-572-1	0-15

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Lithium Hexafluorophosphate(1-)	21324-40-3	244-334-7	0-15
1,3-propanesultone	1120-71-4	214-317-9	0-1
Separator	9002-88-4	618-339-3	0-5

Section 3. Hazards Summarizing

Danger sort	N/A
Routes of entry	1. Eyes and Skin – When leaking, the electrolyte solution contained in the battery irritates to ocular tissues and the skin. 2. Inhalation – Respiratory (and eye) irritation may occur if fumes are released due heat or an abundance of leaking batteries.

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	3. Ingestion – The ingestion of the battery can be harmful. Content of open battery can cause serious chemical burns of mouth, esophagus and gastrointestinal tract.
Health harm	Exposure to leaking electrolyte from ruptured or leaking battery can cause: 1. Inhalation – Burns and irritation of the respiratory system, coughing, wheezing, and shortness of breath. 2. Eyes – Redness, tearing, burns. The electrolyte is corrosive to all ocular tissues. 3. Skin – The electrolyte is corrosive and causes skin irritation and burns. 4. Ingestion – The electrolyte solution causes tissue damage to throat and gastrointestinal track.
Environment harm	Not necessary under conditions of normal use
Explosion danger	The battery may be explosive at high temperature (above 60℃) or exposing to the fire.
Section 4. First Aid Measures	
Skin contact	Contents of an open battery can cause skin irritation and/or chemical burns. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.
Eye contact	Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

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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.
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.

Section 5. Fire Fighting Measures

Extinguisher Media:	CO2 or dry chemical power specified by the manufacturer) or fire, over-charged, short circuit, punctured and crushed.
Special Fire-Fighting Procedures:	In case of fire in cell original containers, use CO2 or dry chemical extinguisher; For fire in an adjacent area, water can be used.

Section 6. Accidental Release Measures

On Land:

Place material into suitable containers, If the skin has come into contact with the electrolyte, it should be washed thoroughly with water, Sand or earth should be used to absorb any exuded material. Seal leaking battery and contaminated absorbent material should be treated by local regulation, and call local fire/police department to ask for help.

In Water:

If possible, remove from water far from body in special fixture, and call local fire/police department to ask for help

Section 7. Handling and Storage

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Handling	1. Take all precautions mentioned in this document and operate the battery within the temperature range of -20℃ and 45℃. 2. No special protective clothing required for handling individual cells in corrective operational method. 3. Improper handling of lithium ion battery may result in injury or damage from electrolyte leakage, heating, ignition or explosion. So do not crush, pierce, short cell/battery terminals with conductive material; Do not directly heat or solder; do not throw into fire; do not place cell/battery in non conductive trays.
Storage	The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of time. Stored in a cool, dry, and well ventilated area. Elevated temperatures can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames.
Section 8. Exposure Controls/Personal Protection	
Engineering Controls	keep away from heat and open flame, prevent hard & sharp thing penetration, store in a cool & dry place.
Ventilation	Not necessary under normal conditions
Respiratory Protection	Not necessary under conditions of normal use. If battery is burning, leave the area immediately. During fire fighting fireman should use self-contained breathing, full-face respiratory equipment. Fires may be fought but only from safe fire fighting distance, evacuate all persons from the area of fire immediately.

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Eye Protection	Not necessary under conditions of normal use. Use safety glasses with side shields if handling a leaking or ruptured battery.
Body Protection	Not necessary under conditions of normal use. Use rubber apron and protective working in case of handling a leaking of ruptured battery.
Protective Gloves	Not necessary under conditions of normal use. Use chemical resistant rubber gloves if handling a leaking or ruptured battery.
Others	Not necessary under normal operation conditions.

Section 9. Physical and Chemical Properties

state	solid
Odor	N/A
PH	N/A
Vapor pressure	N/A
Vapor density	N/A
Boiling point	N/A
Solubility in water	Insoluble
Specific gravity	N/A
Density	N/A

Section 10. Stability and Reactivity

Stability	Stable
Conditions to	Avoid contact with water and acids. Hazardous decomposition products: If Al package foil of battery is damaged, the battery should avoid to contact

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Avoid	strong oxidizer, acids and high temperature, and the electrolyte will be formed HF.
Hazardous Decomposition Products	None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.
Incompatibilities	None during normal operation. Avoid exposure to heat, open flame, and Corrosives.

Section 11. Toxicological Information

This product does not elicit toxicological properties during routine handling and use.

Section 12. Ecological Information

Some materials within the cell are bioaccumulative. Under normal conditions,these materials are contained and pose no risk to persons or the surrounding environment.

Section 13. Disposal Considerations

California regulated debris
RCRA Waste Code : Nonregulated
Dispose of according to all federal, state, and local regulations.

Section 14. Transport Information

The rechargeable Lithium-Ion battery pack as stated in Appendix are made in compliance to the requirements stated in the latest edition of the IATA Dangerous Goods Regulations Packing Instruction 965 section IB such that they can be transported as a NOT RESTRICTED (non-hazardous/non-dangerous) goods. However, if those lithium-ion battery packs are pack with or contained in an equipment, then it is the responsibility of the shipper to ensure that the consignment are packed in compliance to the latest edition of the IATA Dangerous Goods Regulations section II of either Packing Instruction 966 or 967 in order for that consignment to be declared as NOT RESTRICTED (non-hazardous/non-Dangerous). If package is damaged,

batteries must be quarantined, inspected, and repacked. With regard to transport, the following regulations are cited and considered:

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- The International Civil Aviation Organization (ICAO) Technical Instructions (2025-2026 Edition),

- The International Air Transport Association (IATA) Dangerous Goods Regulations (66th Edition, 2025)

- The International Maritime Dangerous Goods (IMDG) Code (2022 Edition, including Amendment 41-22),

- US Hazardous Materials Regulations 49 CFR(Code of Federal Regulations) Sections 173-185 Lithium batteries and cells,

- The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries, 7th revised edition, Amend 1

- UN No. 3480 Our products are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to all the applicable international and national governmental regulations, not limited to the above mentioned. We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in accordance with UN Recommendations (T1 – T8) on the Transport of Dangerous Goods Model Regulations and the Manual of Testes and Criteria that can be treated as "Non-Dangerous Goods".

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.
Meets requirements of DOT Special Provision 188 to be transported as non-dangerous goods
Meets the requirements of 49 CFR 173.185 to be transported as non-dangerous goods for road, rail,air,and vessel(Effective october1,2016)

Section 15. Regulatory Information

OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazardous ☑ **Non-hazardous**

Section 16. Other Information

Prepared Department: Tech Dept. DESAY Battery Co.,Ltd

Reviewed Department: Quality Dept. DESAY Battery Co.,Ltd

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