

Safety Data Sheet

Section 1: Chemical product and company identification

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Manufacturer : DLG(Shanghai) Electronic Technology Co.,LTD.
Building 9, No.3492 Jinqian Road, Fengxian District,
Shanghai, China

Type of equipment : Li-ion Battery

Model/Type : Geero 2.0 removable battery

Ratings : 44.4V, 10Ah, 444Wh

Inspection Specification : UN "Recommendations on the TRANSPORT OF
DANGEROUS GOODS"

Section 2: Composition information

Ingredient	Concentration	CAS No.	EC No.
Lithium nickel oxide	25-35 %	12325-84-7	-
Graphite	20-30 %	7782-42-5	231-955-3
Iron	10-20 %	7439-89-6	231-096-4
Copper	5-15 %	7440-50-8	231-159-6
Cobalt lithium dioxide	1-5 %	12190-79-3	235-362-0
Methyl propionate	1-5 %	554-12-1	209-060-4
Aluminum	1-5 %	7429-90-5	231-072-3
Lithium hexafluorophosphate (1-)	1-3 %	21324-40-3	244-334-7
Dimethyl carbonate	1-3 %	616-38-6	210-478-4
Polyethylene	1-3 %	9002-88-4	618-339-3
Diiron trioxide	0.1-1 %	1309-37-1	215-168-2
Boehmite (Al(OH)O)	0.1-1 %	1318-23-6	215-284-3
Carbon black	0.1-1 %	1333-86-4	215-609-9
1-Methyl-2-pyrrolidone	0.1-1 %	872-50-4	212-828-1
Aluminum lithium oxide (LiAlO)	0.1-1 %	11089-89-7	-
Chromium	0.1-1 %	7440-47-3	231-157-5
Lithium carbonate	0.1-1 %	554-13-2	209-062-5
Ethylbenzene	0.1-1 %	100-41-4	202-849-4

Section 3: Hazards identification

Fire or Explosion Hazards: Lithium ion battery contains flammable liquid electrolyte that may vent, ignite and produce sparks when subjected to high temperatures (>150°C), when damaged or abused (e.g., mechanical damage or electrical overcharging). May burn rapidly with flare-burning effect. May ignite other batteries in close proximity.

Health Hazards: Contact with the electrolyte of battery may be irritating to skin, eyes and mucous membranes. Fire will produce irritating, corrosive and/or toxic gases. Fumes may cause dizziness or suffocation.

Section 4: First aid measures

Skin Exposure: If in contact with the internal materials of battery, remove the contaminated clothing, shoes and socks, immediately flush with plenty of water for at least 20 minutes. Call a physician.

Eye Exposure: If in contact with the internal materials of battery, lift your eyelids immediately and rinse them with running water for more than 20 minutes. Call a physician.

Inhalation Exposure: If the internal materials of battery are inhaled, immediately remove to fresh air. If breathing is difficult give oxygen. If not breathing, give artificial respiration. Call a physician.

Oral Exposure: Do not induce vomiting if the internal materials of battery are swallowed. Call a physician immediately.

Most Important Symptoms/Effects, Acute and Delayed: N/A

Indication of Immediate Medical Attention and Special Treatment Needed, if necessary: N/A

Section 5: Fire-fighting measures

Suitable Extinguishing Media: Water spray or regular foam.

Specific Hazards Arising from the Chemical: May decompose upon combustion to generate irritating, corrosive or toxic fumes. Fumes may cause dizziness or suffocation.

Special Protective Action for Fire-fighters: Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Fire-extinguishing work is done from the windward. Uninvolved persons should evacuate to a safe place.

Section 6: Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures: Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Entry to noninvolved personnel should be controlled around the leakage area by roping off. Remove all sources of ignition.

Environmental Precautions: Avoid leakage getting into the earth, ditches or waters. Avoid directly releasing the washing waste-water into the environment.

Methods and Materials for Containment and Clean up: If the electrolyte leaks, use soil, sand or other non-combustible materials to absorb. The leaked batteries and dirty adsorbents should be placed in metal containers.

Section 7: Handling and storage

Precautions for Safe Handling: Operators should be trained and strictly abide by operating procedures. Wear appropriate protective clothing and safety gloves. Keep away from ignition sources, heat and flame. No smoking at working site. Handling is performed in a well ventilated place. Avoid disassembling the battery at will and reversing battery polarity within the battery assembly. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. If the electrolyte leaks, avoid directly contacting with eyes and skin. Avoid inhalation. Incompatibilities: Strong oxidizing agents, combustible materials and corrosives.

Condition for Safe Storage, Including Any Incompatibilities: Store in a cool, dry, and well-ventilated area. Keep away from ignition sources, heat and flame. Incompatibilities: Strong oxidizing agents, combustible materials and corrosives. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

Section 8: Exposure controls/personal protection

Control Parameters: GBZ 2. 1-2019 Occupational Exposure Limits for Hazardous Agents in the Workplace - Part 1: Chemical Hazardous Agents:

Coppr: Copper dust PC-TWA 1mg/m³; Copper smoke PC-TWA 0.2mg/m³

Aluminum metal and aluminum alloy dust: PC-TWA 3mg/m³ (total dust)

Graphite dust: PC-TWA 4mg/m³ (total dust) 2mg/m³ (inhalable dust)

Cobalt lithium dioxide: Cobalt and compounds, as Co: PC-TWA 0.05 mg/m³ PC-STEL 0.1 mg/m³ Remark: G2B; Sensitization

Metallic nickel and insoluble nickel compounds: PC-TWA 1mg/m³ Remark: G2B (Metals and alloys)

Polyethylene dust: PC-TWA 5 mg/m³

Carbon black dust: PC-TWA 4 mg/m³ (total dust) Remark: G2B

Chromium metal: PC-TWA 0.05 mg/m³ Remark: G2B; Sensitization

Ethylbenzene: PC-TWA 100 mg/m³; PC-STEL 150 mg/m³ Remark: G2B

AGGIH:

Copper: TLV-TWA 1 mg(CU)/m³, dust, mist TLV-TWA 0.2 mg(Cu)/m³, fume

Aluminum: TLV-TWA 1 mg/m³

Graphite: TLV-TWA 2 mg/m³

Diiron Trioxide: TLV-TWA 10 mg/m³ (inhalable dust)

Carbon black: TLV-TWA: 3 mg/m³ (inhalable dust)

Chromium: TLV-TWA 0.5 mg(Cr)/m³

Ethylbenzene: TLV-TWA 100ppm TLV-STEL 125ppm

Appropriate Engineering Controls: Mechanical exhaust required. Safety shower and eye bath.

Individual Protection Measures: N/A

Eye/Face Protection: Wear chemical safety glasses if needed.

Skin Protection: Hand Protection: Wear safety gloves. Body Protection: Wear appropriate protective clothing.

Respiratory Protection: Wear government approved respirator if needed.

Thermal Hazards: N/A

Other Protect: No smoking, drinking and eating at working site. Wash thoroughly after handling.

Section 9: Physical and chemical properties

Appearance: Black plastic shell
Odor: Odorless
pH Value: 8-9
Solubility: Partial Soluble in water
Boiling Point, Initial Boiling Point and Boiling Range: N/A
Melting Point/Freezing Point: >300°C
Flash Point (Closed Cup): N/A
Density/ Relative Density: N/A
Kinematic Viscosity: N/A
Lower/Upper Explosion Limit/ Flammability Limit: N/A
Vapor Pressure: N/A
Relative Vapor Density: N/A
Partition Coefficient N-Octanol/ Water (Log Value): N/A
Autoignition Temperature: N/A
Decomposition Temperature: N/A
Particle Characteristics: N/A
Flammability (Solid, Gas): N/A

Section 10: Stability and reactivity

Reactivity: N/A

Chemical Stability: Stable under normal temperature and pressure

Possibility of Hazardous Reactions: N/A

Condition to Avoid: Avoid disoperation, exposure to heat and open flame. Avoid mechanical or electrical abuse and overcharge. Prevent short circuits and short circuits caused by movement.

Incompatible Materials: Strong oxidizing agents, combustible materials and corrosives.

Hazardous Decomposition Products: Carbon oxides, metal oxides, etc.

Section 11: Toxicological information

Acute Toxicity: N/A

Skin Corrosion / Irritation: The electrolyte in the battery cause skin irritation.

Serious Eye Damage / Irritation: The electrolyte in the battery cause eye irritation.

Respiratory Sensitization: N/A

Carcinogenicity: N/A

Skin Sensitization: N/A

Germ Cell Mutagenicity: N/A

Reproductive Toxicity: N/A

Specific Target Organ Toxicity - Single Exposure: N/A

Specific Target Organ Toxicity - Repeated Exposure: N/A

Aspiration Hazard: N/A

Section 12: Ecological information

Toxicity: N/A

Persistence and Degradability: N/A

Bioaccumulative Potential: N/A

Mobility in Soil: N/A

Other Adverse Effects: N/A

Section 13: Disposal consideration

Disposal Methods: The disposal of discarded battery shall comply with the requirements of relevant laws, regulations, policies and standards such as the "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste" and "Technical Policy for the Prevention and Control of Waste Battery Pollution". Contact a licensed or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.

Section 14: Transport information

Only Lithium Battery during Transport: The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3.

RID/ADR (2019 Edition): Hazard Class: 9 UN Number: UN3480 Packaging Marks: Miscellaneous Proper Shipping Name: Lithium ion batteries
According to 2.2.9.1.7 (g) of RID/ADR (2019 Edition). Manufactures and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, Sub-section 38.3, paragraph 38.3.5.

IATA DGR (62nd Edition): Hazard Class: 9 UN Number: UN3480 Packaging Marks: Miscellaneous Proper Shipping Name: Lithium ion batteries
The product shall meet the General Requirements and Section IA of Packaging Instruction 965.
According to 3.9.2.6.1(g) of IATA DGR (62nd Edition), Manufactures and Subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria. Part III, sub-section 38.3, paragraph 38.3.5.

IMO IMDG Code (2018 Edition): Hazard Class: 9 UN Number: UN3480 Packaging Marks: Miscellaneous Proper Shipping Name: Lithium ion batteries EmS Number: F-A, S-I

According to 2.9.4.7 of IMO IMDG Code (2018 Edition, Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the /manual of Test and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

Section 15: Regulation information

Domestic Regulations:

Only Lithium Battery during Transport:

Regulations Concerning Road Transportation of Dangerous Goods (JT/T 617-2018):
UN Number: 3480 Name and Description: Lithium ion batteries

List of Dangerous Goods (GB 12268-2012): UN Number: UN3480 Shipping Name:
Lithium ion batteries Packing Group: II

List of Dangerous Goods by Rail (2009 Edition): Number: 91013 Name of Product:
Lithium batteries

International Regulations:

Directive 2006/66/EC and 2013/56/EU: The label, disposal and recycling of the battery shall meet the requirement of EU Directive 2006.66.EC and 2013/56/EU.

ICAO TI:

- 1, Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN3480, PI 965) and lithium metal cell/batteries (UN3090, PI 968) are forbidden for carriage on passenger aircraft.
- 2, Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.
- 3, A shipper is not permitted to offer for transport more than (1) package prepared according to Section II of PI 965 and PI 968 in any single consignment. Not more than one (1) package prepared in accordance with Section II of PI 965 and PI 968 may be placed into an overpack.
- 4, Packages prepared according to Section II of PI 965 and PI 968 must be offered to the operator separately from other cargo and must not be loaded into a unit load device (ULD) before being offered to the operator.

Section 16: Other information

Abbreviation and Acronyms:

CAS: Chemical Abstracts Service

EC: European Commission

AGGIH: American Conference of Governmental Industrial Hygienists

PC-TWA: Permissible concentration-time weighted average

TLV-TWA: Time weighted average threshold limit

G1: Carcinogenic to humans

G2B: Possibly carcinogenic to humans

Sensitization: The substance may have allergenic effects

PC-STEL: Permissible concentration - short term exposure limit

TLV-STEL: Threshold limit value - short term exposure limit

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail

IMO IMDG CODE: International Maritime Organization International Maritime Code for Dangerous Goods

EmS: Emergency schedule

IATA DGR: International Air Transport Association Dangerous Goods Regulations

EU: European Union

ICAO TI: International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air

PI: Packaging Instruction

Other Information: This SDS is compiled based on the information such as ingredients provided by the applicant and our current knowledge. This SDS shall be used only as a guide. The users of this SDS must make independent judgments on the correctness and completeness and then decide its suitability according to the actual situation. The users should take the relevant legal responsibilities for the consequences of use.

Section 17: Pictures





TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

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