Material Safety Data Sheet

1. Product & Company Identification

Product name:	Li-Ion Battery, rechargeable

Item no.	Nominal Voltage	Capacity	Energy content
2878223	14.8 V	5000 mAh	74 Wh

Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	29.03.2023

2. Hazards Identification

Classification of Danger

See section 14.

Primary Route(s) of Exposure

Eye, skin contact, ingestion.

Health Hazard

The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components, which could cause casualty loss.

Abuses including but not limited to the following cases: charged for long time, short circuited, put into fire, whacked with hard object, punctured with acute object, crushed, and broken.

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3. Composition/Information on Ingredients

Chemical Name	Molecular formula	Concentration or concentration ranges (%)	CAS Number
Lithium Cobalt Oxide	LiCoO2	39.07	12190-79-3
Aluminum foil	AL	7.66	7429-90-5
Graphite	C	19.53	7782-42-5
Copper foil	Cu	9.47	7440-50-8
Positive Tab	AL	1.57	7429-90-5
Negative Tab	Ni	1.68	7440-02-0
Separator	PE	0.97	9002-88-4
Electrolyte	F6LiP	18.07	21324-40-3
Aluminum plastic film	AL	1.98	7429-90-5
	PP		9003-07-0

Labeling according to EC directives.

No symbol and Hazard phrase are required.

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

4. First Aid Measures

Eye

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

Inhalation

Remove from exposure and move to fresh air immediately. Use oxygen if available.

Ingestion

Induce vomiting unless patient is unconscious. Call a physician.

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5. Fire Fighting Measures

Characteristics of Hazard

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Carbon dioxide.

Fire-extinguishing Methods and Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Attention in Fire-extinguishing

Wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures

In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in Sections 7 and 8.

Environmental Precautions

Prevent product from contaminating soil and from entering sewers or waterways.

Methods and materials for Containment

Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.

Methods and materials for cleaning up

Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.

7. Handling and Storage

Handling

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Storage

Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of the reach of children.

Other Precautions

In case of rupture. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.

8. Exposure Controls/Personal Protection

Engineering Controls

Use adequate ventilation to keep airborne concentrations low. If used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m3 respirable fraction (10mg/m3 total) should be observed.

Personal Protective Equipment

Eye and Face Protection:

None required for consumer use. If there is a Hazard of contact: Tight sealing safety goggles. Face protection shield.

Skin and Body Protection:

None required for consumer use. If there is a Hazard of contact: Wear protective gloves and protective clothing.

Respiratory Protection:

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

9. Physical and Chemical Properties

Physical State

Appearance: Cuboid

Color: Specific

Odour: If leaking, smells of medical ether.

Change in condition:

pH: Not applicable as supplied.

Flash Point: Not applicable unless individual components exposed.

Flammability: Not applicable unless individual components exposed.

Relative density: Not applicable unless individual components exposed.

Solubility (water): Not applicable unless individual components exposed.

Solubility (other): Not applicable unless individual components exposed.

10. Stability and Reactivity

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids, Oxidizing agents, Bases.

Hazardous Decomposition Products

Carbon oxides.

11. Toxicological Information

Irritation

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

Sensitization

Not Available.

Reproductive Toxicity

Not Available.

Toxicologically Synergistic Materials

Not Available.

12. Ecological Information

General note:

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

Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity

Not Available.

13. Disposal Considerations

Waste Treatment

Recycle or dispose of in accordance with government, state & local regulations.

Attention for Waste Treatment

Deserted batteries shouldn't be treated as ordinary trash. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. Best disposal method is recycling.

14. Transport Information

UN number

3480 & 3481

Proper shipping name

Lithium ion batteries (limited to a maximum of 30% SoC) or;

Lithium ion batteries packed with equipment (including lithium ion polymer batteries) or;

Lithium ion batteries contained in equipments (including lithium ion polymer batteries).

Label(s) / Placard Required

Miscellaneous Lithium BATT

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

ICAO / IATA:

Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section IB, PI 966 Section II and PI 967 Section II appropriate of IATA DGR 64th (2023 Edition) for transportation.

IMDG CODE:

The batteries are not restricted to IMDG Code 2020 Edition (Amdt 40-20) according to special provision 188.

DOT:

Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185. The batteries are not subject to the provisions of United Nations Economic Commission for Europe (UNECE) ADR/ADN if they meet the requirements of special provision 188 of Chapter 3.3. Applicable as from 1 January 2021.

In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria. The batteries should be well protected against short circuits.

15. Regulatory Information

Dangerous Goods Regulations

Recommendations on the Transport of Dangerous Goods-Model Regulations (22nd revised edition)

Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria

International Air Transport Association (IATA)

International Maritime Dangerous Goods (IMDG Code 2020 Edition Amdt 40-20)

Technical Instructions for the Safe Transport of Dangerous Goods

Classification and code of dangerous goods (GB 6944-2012)

2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Toxic Substance Control Act (TSCA)

Code of Federal Regulations

In accordance with all Federal, State and local laws

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16. Additional Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.