



Material Safety Data Sheet

1. Product & Company Identification

Product name:	Li-ion Polymer Battery
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BN	Nominal Voltage	Capacity	Energy content
209254	3.7 V	1000 mAh	3.7 Wh

Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	13.01.2022

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 risk of rupture, fire, heat, leakage of internal components, with could cause casualty loss. Abuses include 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.

The battery has passed the test items of UN Model Regulations, Manual of Test and Criteria Section UN38.3; the sealed Battery is not hazardous in normal use.

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3. Composition/Information On Ingredients

Chemical Composition	CAS No.	Concentration or concentration ranges (%)
Lithium Cobalt Oxide	12190-79-3	28.35
Polyvinylidene Fluoride (PVDF)	24937-79-9	1.13
Aluminum (Al)	7429-90-5	21.75
Graphite	7482-42-5	15.36
Butadiene Rubber (SBR)	9003-55-8	0.35
Carboxymethylcellulose	9000-11-7	0.38
Copper (Cu)	7440-50-8	10.38
Nickel (Ni)	7440-02-0	1.23
Lithium Hexafluorophosphate	21324-40-3	16.22
Polyethylene	9002-88-4	3.05
Nylon	24937-16-4	0.75
Polypropylene	9003-07-0	1.05

Labeling according to EC directives.

No symbol and risk 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

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician



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5. Fire Fighting Measures

Characteristics of Hazard

Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes.

Hazardous Combustion Products

Carbon dioxide.

Fire-extinguishing Methods and Extinguishing Media

For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

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

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.

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

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.



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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 risk of contact: Tight sealing safety goggles. Face protection shield.

Skin and Body Protection: None required for consumer use. If there is a risk 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: Prismatic

Color: Silver

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.

Possibility of Hazardous Reactions

Not Available.

Conditions to Avoid

Flames, sparks, and other sources of ignition, incompatible materials.

Incompatible materials

Oxidizing agents, acid, base.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.



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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 couldn't be treated as ordinary trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling.

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14. Transport Information

UN number

UN3480 or UN3481

Proper shipping name

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

Class or division

9

Marine pollutant (Yes/No)

No

Packing group

N/A

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, or (PI) 966 Section II, or (PI) 967 Section II appropriate of IATA DGR 63rd (2022 Edition) for transportation.

IMDG CODE:

The batteries are not restricted to IMDG Code 2020 Edition (Amdt40-20) according to special provision 188.

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.

15. Regulatory Information

Dangerous Goods Regulations

Recommendations on the Transport of Dangerous Goods-Model Regulations

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

International Air Transport Association (IATA)

International Maritime Dangerous Goods (IMDG)

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. Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.