

Material Safety Data Sheet

1. Product & Company Identification

Product:	Rechargeable Lithium Ion Battery
Nominal voltage:	3.7 V
Nominal capacity:	220 mAh (0.814 Wh)
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	03.01.2020

2. Hazards Identification

Emergency overview

This product is a battery. Intended use of the product should not result in exposure to the chemical substance. In case of rupture the below hazards exist.

Classification according to GHS

Acute toxicity, oral (4)

Skin corrosion/irritation (2)

Serious eye damage/eye irritation (2A)

Specific target organ toxicity, single exposure; Respiratory tract irritation (3)

Label elements

Hazard pictogram(s):



Signal word:

Warning

Hazard statement(s):

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

Material Safety Data Sheet

Precautionary statement(s):

Prevention:

P264 Wash skin and clothing thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves, protective clothing, eye protection, face protection.

P261 Avoid breathing dust, fume, gas, mist, vapours, spray.

P271 Use only outdoors or in a well-ventilated area.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER if you feel unwell.

P330 Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty water.

P321 Specific treatment (See additional emergency instructions).

P333 + P313 If skin irritation or rash occurs: Get medical advice.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER, if you feel unwell.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Send contents to approved waste treatment plants.

Other hazards

Physical and chemical hazards: See Section 10

Human health hazards: See Section 11

Environmental hazards: See Section 12

Material Safety Data Sheet

3. Composition/Information on Ingredients

Chemical characterization:

Mixture

Chemical Composition	CAS No.	EC No.	Weight (%)
Aluminium	7429-90-5	231-072-3	2 - 10
Copper	7440-50-8	231-159-6	5 - 10
Nickel	7440-02-0	231-111-4	0.5 - 5
Cobaltate, lithium	12190-79-3	235-362-0	25 - 50
Graphite	7782-42-5	231-955-3	20 - 30
Polyvinylidene fluoride resin	24937-79-9	607-458-6	0 - 5
Phosphate(1-), hexafluoro-, lithium	21324-40-3	244-334-7	10 - 20
Diaphragm	-	-	5 - 10

4. First Aid Measures

Description of first aid measures

General information

No special measures required.

After eye contact

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

After skin contact

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

After inhalation

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

After swallowing

Do not induce vomiting. Get medical attention.

Personal protective equipment for first-aid responders

No data available.

Most important symptoms/effects, acute and delayed

No data available.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

Material Safety Data Sheet

5. Fire Fighting Measures

Suitable extinguishing media:

Small Fire: Dry chemical, CO₂, water spray or regular foam.

Large Fire: Water spray, fog or regular foam.

Move containers from fire area if you can do it without risk.

Unsuitable extinguishing media:

No data available.

Specific Hazards arising from the chemical:

Special hazards arising from the substance or mixture:

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature (>150°C / 302°F), 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.

Specific protective actions for fire-fighters:

Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

6. Accidental Release Measures

Personal precautions:

As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. Keep unauthorized personnel away. Stay upwind, uphill and/or upstream. Ventilate closed spaces before entering. Large Spill: Consider initial downwind evacuation for at least 100 meters (330 feet).

Protective equipment:

No data available.

Emergency procedures:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Absorb with earth, sand or other non-combustible material. Leaking batteries and contaminated absorbent material should be placed in metal containers.

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Methods and materials for containment and cleaning up:

For all waste handling must refer to United Nations, National and Local Regulations for disposal.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Material Safety Data Sheet

7. Handling and Storage

Precautions for safe handling:

Avoid short circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble. Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps.

Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

8. Exposure Controls/Personal Protection

Control parameters:

CAS No.	ACGIH	NIOSH	OSHA
7429-90-5	TLV-TWA 1mg/m ³	REL-TWA 2mg/m ³ REL-TWA 5mg/m ³ REL-TWA 10mg/m ³	PEL-TWA 5mg/m ³ PEL-TWA 15mg/m ³
7440-50-8	TLV-TWA 0.2mg/m ³ TLV-TWA 1mg/m ³	REL-TWA 1mg/m ³ REL-TWA 0.1 mg/m ³	PEL-TWA 0.1 mg/m ³ PEL-TWA 1mg/m ³
7440-02-0	TLV-TWA 1.5mg/m ³	REL-TWA 0.015mg/m ³	PEL-TWA 1 mg/m ³
12190-79-3	N/A	N/A	N/A
7782-42-5	TLV-TWA 2mg/m ³	REL-TWA 2.5mg/m ³	PEL-TWA 15mppcf PEL-TWA 20mppcf
24937-79-9	N/A	N/A	N/A
21324-40-3	N/A	N/A	N/A

Appropriate engineering controls:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Personal Protective Equipment:

Respiratory protection: Wear suitable protective mask. For a large large number of battery leakages, wear chemical protective clothing, including self-contained breathing apparatus.

Hand Protection: Wear appropriate protective gloves to reduce skin contact.

Eye Protection: Wear safety goggles or eye protection combined with respiratory protection.

Skin and Body Protection: Working environment required, wear suitable protective clothing to minimize contact with skin. The type of protective equipment must be according to the concentration and the content of certain hazardous substances in the workplace.

Material Safety Data Sheet

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Colour:	Silver
Physical State:	Prismatic
Odour:	Not available.
Odour threshold:	Not available.
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 (solid, gas):	Not available.
Explosion Limits (vol% in air):	Not available.
Vapour pressure, kPa at 20°C:	Not available.
Vapor density:	Not available.
Density/Relative density (water = 1):	Not available.
Solubility(ies):	Not available.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Other information:	Not available.
Voltage:	3,7 V
Electric capacity:	220 mAh
Electric Energy:	0.814 Wh

Material Safety Data Sheet

10. Stability and Reactivity

Reactivity:

No data available.

Chemical stability:

Stable.

Possibility of hazardous reactions:

No data 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.

11. Toxicological Information

Acute Toxicity:

CAS No.	LC50/LD50
7429-90-5	No data available.
7440-50-8	No data available.
7440-02-0	LD50 Rat (oral): >9000mg/kg
12190-79-3	No data available.
7782-42-5	No data available.
24937-79-9	No data available.
21324-40-3	No data available.

Skin corrosion/irritation:

No data available.

Serious eye damage/irritation:

No data available.

Respiratory or Skin sensitization:

No data available.

Germ Cell mutagenicity:

No data available.

Carcinogenicity:

No data available.

Material Safety Data Sheet

Reproductive toxicity:

No data available.

Specific target organ toxicity-Single exposure:

No data available.

Specific target organ toxicity-Repeated exposure:

No data available.

Aspiration hazard:

No data available.

Information on the likely routes of exposure:

No data available.

Eye:

No data available.

Skin:

No data available.

Ingestion:

No data available.

Inhalation:

No data available.

12. Ecological Information

Ecological Toxicity:

No data available.

Persistence and degradability:

No data available.

Bioaccumulative Potential:

No data available.

Mobility in Soil:

No data available.

Other adverse effects:

No data available.

13. Disposal Considerations

Disposal methods

Recommendation:

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packaging

Recommendation: Disposal must be made according to official regulations.

Material Safety Data Sheet

14. Transport Information

UN Number

IATA UN3480

IMDG UN3480

UN Proper shipping name

IATA Lithium ion batteries

IMDG LITHIUM ION BATERIES

Transport hazard class(es)

IATA 9

IMDG 9

Packing group

IATA N/A

IMDG N/A

Packaging Sign

IATA



IMDG N/A

Environmental hazards

Marine pollutant:

No

Special precautions for user:

No information available.

Transport information:

The Lithium ion battery has passed the test UN38.3, according to the report ID: MNIGNIWX92735721.

Exceeds the standard of Table 965- II, so it belongs to dangerous goods. According to the Packing Instruction 965 section IB of IATA DGR 61th Edition for transportation, Cargo aircraft only.

According to the special provision 188 of IMDG (39-18), the goods are not subject to other provision of this code.

Separate batteries to prevent short-circuiting, and they should be packed in strong package during transport. Lithium cell or battery should incorporate a safety venting device or be designed to prevent a violent rupture under normal transport conditions. Keep away from high temperature and open flames.

Note:

State of Charge (SoC) not exceeding 30% of their rated capacity. (By air, Lithium ion batteries)

Transport Fashion:

By air, by sea.

Material Safety Data Sheet

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

CAS No.	TSCA	IECSC	DSL/NDSL	EINECS/ ELINCS/ NLP
7429-90-5	Listed	Listed	Listed DSL	Listed
7440-50-8	Listed	Listed	Listed DSL	Listed
7440-02-0	Listed	Listed	Listed DSL	Listed
1 2190-79-3	Listed	Listed	Listed DSL	Listed
7782-42-5	Listed	Listed	Listed DSL	Listed
24937-79-9	Listed	Listed	Listed DSL	Listed
21324-40-3	Listed	Listed	Listed DSL	Listed

16. Other Information

Notice to reader

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.

Other Information:

CAS: (Chemical Abstracts Service);

EC: (European Commission);

ACGIH: (American Conference of Governmental Industrial Hygienists);

NIOSH: (US National Institute for Occupational Safety and Health);

OSHA: (US Occupational Safety and Health);

TLV: (Threshold Limit Value)

TWA: (Time Weighted Average);

STEL: (Short Term Exposure Limit);

PEL: (Permissible Exposure Level);

REL: (Recommended Exposure Limit);

PC-STEL: (Permissible concentration-short time exposure limit);

PC-TWA: (Permissible concentration-time weighted average);

LC50: (Lethal concentration, 50 percent kill);

LD50: (Lethal dose, 50 percent kill);

IARC: (International Agency for Research on Cancer);

EC50: (Median effective concentration);

BCF: (Bioconcentration Factor);

BOD: (Biochemical oxygen demand);

Material Safety Data Sheet

NOEC: (No observed effect concentration);

NTP: (US National Toxicology Program);

RTECS: (Registry of Toxic Effects of Chemical Substances);

IATA: (International Air Transport Association);

IMDG: (International Maritime Dangerous Goods);

TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations);

TOC: (Total Organic Carbon);

TSCA: (Toxic Substances Control Act of USA);

DSL: (the Domestic Substances List of Canada);

NDSL: (the Non-domestic Substances List of Canada)