Material Safety Data Sheet

1. Product & Company Identification

Product name:	L-Ion-Battery, rechargeable

Size	**Nominal Voltage**	**Capacity**	**Energy content**
CR123	3.7 V	650 mAh	2.405 Wh

Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	01.01.2023

Product Identifier

Product name: Rechargeable Li-ion Battery

Model/Type: CR123 3.7V 650mAh

Other means of identification

Synonyms: none

Relevant identifieduse of Product and uses advised against

Recommended Use: electronic product

Uses advised against: Don't disassemble, impact, crush, put into fire or water, don' t use above 60°C

2. Hazards Identification

Emergency Overview:

May explode in a fire, which could release irritant gas.

Skin contact:

No known significant effects or critical hazards under normal use.Contact with damaged batteries may cause burns.

Eye contact:

No known significant effects or critical hazards under normal use.Contact with damaged batteries may cause burns.

Inhalation:

Inhalation of vapors or fumes released due to heat or a large number of leaking batteries maycause respiratory and eye irritation.

Ingestion:

Ingestion of product contents may cause mouth, throat and intestinal burns and damage.

3. Composition/Information On Ingredients

Chemical characterization:

Mixtures

Description:

Chemical power supply based on nonaqueous electrolyte. Composed by positive electrode, negative electrode, diaphragm, electrolyte and shell.

Hazardous ingredients:

Chemical Composition	Chemical Formula	CAS No.	Weight(%)
Nickel cobalt manganese	LiNixCoyMn1-x-yO2	182442-95-1	47
Graphite	C	7782-42-5	20.2
Organic Electrolyte	C3H4O3	96-49-1	3.35
	C4H8O3	623-53-0	0.785
	C5H10O3	105-58-8	5.23
	C4H6O3	108-32-7	1.785
	F6LiP	21324-40-3	1.35
Polypropylene	C3H6	9003-07-0	1.2
Copper	Cu	7440-50-8	7.7
Aluminum	Al	7429-90-5	4.6
Nickel	Ni	7440-02-0	6.8

4. First-Aid Measures

First aid measures:

Eye Contact:

Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact:

Remove contaminated clothing and shoes. Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation:

Move to fresh air. If symptoms persist, call a physician.

Ingestion:

Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician. Swallowing: Do not induce vomiting. Get medical attention.

Most Important Symptoms/Effects:

No information available.

Indication of any immediate medical attention and special treatment needed;

Inform physician. Treat symptomatically.

5. Fire-Fighting Measures

Suitable Extinguishing Media:

CO2, dry chemical powder, wet sand, plenty of water (for cooling).

Unsuitable Extinguishing Media:

No information available.

Protective Equipment and Precautions for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. For example: Wear self-contained respiratory protective device. Wear suitable protective clothing and eye/face protection.

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.), When damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Personal Precautions

Avoid contact with eyes.

Refer to section 8 for personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas.

Environmental precautions:

Environmental Precautions

Refer to protective measures listed in Sections 7 and 8.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Methods and material for containment and cleaning up:

Methods for Containment

Prevent further leakage or spillage if safe to do so.

Methods for Cleaning up

Use personal protective equipment. Dam up. Cover liquid spill with sand, earth or other Non-combustible absorbent material.

Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. Handling and Storage

Precautions for safe handling:

Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Avoid mechanical or electrical abuse.

More than a momentary short circuit will generally reduce the battery service life. Avoid reversing battery polarity within the battery assembly. In case of a battery unintentionally be crushed, rubber gloves must be used to handle all battery components. Avoid contact with eyes, skin. Avoid inhalation. No smoking at working site. Materials to Avoid: Strong oxidizing agents, Corrosives.

Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area. Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short-circuits.

Materials to Avoid:

Strong oxidizing agents,Corrosives.

8. Exposure Controls and Personal Protection

Engineering Controls:

Use ventilation equipment if available. Safety shower and eye bath.

Personal Protective Equipment:

Respiratory System:

Not necessary under conditions of normal use.

Eyes:

Not necessary under conditions of normal use.

Clothing:

Wear appropriate protective clothing.

Hand:

Safety gloves.

Other Protection:

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

9. Physical and Chemical Properties

Physical State

Form: Cylindrical

Color: Specific

Odour: Odourless

Odor Threshold: No information available

Change in condition:

pH, with indication of the concentration Not determined.

Melting point/freezing point: Not determined.

Initial boiling point and Boiling range: Not determined.

Flash Point: Not determined.

Flammability (solid, gas): Not determined.

Upper/lower flammability or explosive limits: Not determined.

Auto-ignition temperature: Product is not self-igniting.

Decomposition temperature: Not determined.

Other Information: No further relevant information available.

10. Stability and Reactivity

Reactivity:

Stable under recommended storage and handling conditions (see section 7).

Chemical stability:

Stable under normal conditions of use, storage and transport.

Thermal decomposition/conditions to be avoided:

No decomposition if used according to specifications.

Possibility of Hazardous Reactions:

None under normal processing.

Hazardous Polymerization:

Hazardous polymerization does not occur.

Conditions to avoid:

Strong heating, fire, Incompatible materials.

Incompatible materials:

Strong oxidizing agents. Strong acids.

Hazardous Decomposition Products:

Carbon oxides, other irritating and toxic gases.

11. Toxicological Information

Acute toxicity:

No data available.

Skin corrosion/irritation:

No irritant effect.

Serious eye damage/irritation:

Cause serious eye irritation.

Respiratory or skin sensitization:

No sensitizing effects known.

Specific target organ system toxicity:

No information available.

Note: The internal battery materials may cause irritation to eyes and skin.

12. Ecological Information

Toxicity:

No further relevant information available.

Persistence and degradability:

No further relevant information available.

Bioaccumulative potential:

No further relevant information available.

Mobility in soil:

No further relevant information available.

Results of PBT and vPvB assessment:

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects:

No information available.

13. Disposal Considerations

Waste treatment methods:

Recommendation: Lithium batteries are best disposed of as a non-hazardous waste when fully or mostly discharged. Contact a licensed professional waste disposal service to dispose of large quantities materials.

Other disposal recommendations:

Recommendation: Disposal must be made according to official regulations.

14. Transport Information

The battery has passed the test items of UN Manual of Test and Criteria Section 38.3.

General packaging requirement:

1. The cells or batteries must be protected so as to prevent short circuits.

2. The cells or batteries or equipment must be packed in suitable strong outer packaging.

3. If batteries contained in equipment, equipment must be secured against movement within the outer packaging and be packed so as to prevent accidental activation.

Remark: PSN=Proper Shipping Name

Air transportation,according to IATA-DGR 64th Edition

UN Number+PSN: UN 340 lithium ion batteries

Hazard Class: Class 9

Packaging requirement: PACKING INSTRUCTION 965,section IB

UN Number+PSN: UN 3481 Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment.

Hazard Class: Not restricted

Packaging requirement: PACKING INSTRUCTION 966-967,section II

Sea transportation, according to IMO IMDG Code (Amend 40-20)

UN Number+PSN: UN 3480 lithium ion batteries or
UN 3481 Lithium ion batteries contained in equipment or
UN 3481 Lithium ion batteries packed with equipment .

Hazard Class: Not restricted

Special provision: SP188

Package instruction: Not-restricted goods

EmS No: F-A, S-I

Road transportation,according to ADR-2023

UN Number+PSN: UN 3480 Lithium ion batteries or
UN 3481 Lithium ion batteries contained in equipment or
UN 3481 Lithium ion batteries packed with equipment .

Hazard Class: Not restricted

Special provision: SP188

Package instruction: Not-restricted goods

Transport Fashion:

By air, by sea, by railway, by road.

Material Safety Data Sheet

15. Regulatory Information

International Regulation:

Globally Harmonized System of Classification and Labeling of Chemicals

Recommendations on the Transport of Dangerous Goods Model Regulations

IATA Dangerous Goods Regulations(DGR)

International Maritime Dangerous Goods(IMDG CODE)

EU Regulation:

EU regulation (EC) 1272/2008 on "Classification, Labeling and Packaging of Substances and Mixtures" (CLP)

Registration,Evaluation and Authorization of Chemicals(REACH)

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

US Regulation:

American National Standard for Hazardous Workplace Chemicals – Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation

16. Other Information

DISCLAIMER: The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. We make no warranty expressed or implied,with respect to this information and disclaims all liabilities from reliance on it.