

Jauch Battery Solutions

- Reliable energy for your application
- Standard cells and customized packs
- ESD protection
- Battery Certification Experts



RoHS compliant

Pb free

REACH compliant

Conflict Mineral free

Product Safety Data Sheet

According Regulation (EC) No 1907/2006 (REACH) a safety data sheet must be provided for substances and preparations only. Batteries are “articles” and therefore not affected by the requirements of this Regulation.
Based on the definition of “article” in the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200, there is no requirement for a Material Safety Data Sheet (MSDS) for lithium primary cells. There is no release of toxic chemicals under normal conditions of use.

Section I - Identification

Product Name:	Lithium Metal (non-rechargeable) Battery
Model(s):	CR J Lithium 3V button cell (see Annex)
Chemical System:	Lithium - Manganese - Dioxide (Li + MnO_2 → $LiMnO_2$) not designated for recharge

Recommended use : no restriction (see section VII Handling and Storage)

Manufacturer:

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Section II – Hazard Identification

Batteries are articles and therefore exempted from the UN-GHS classification requirements. There are no GHS labelling requirements for articles. Other labelling requirements apply for batteries according to the EU Regulation 2023/1542 for batteries.

Nevertheless, the following warning must be observed: keep out of reach of children.

The chemicals mentioned in Section III are contained in a sealed can. Risk of exposure occurs only if the cell / battery is mechanically or electrically abused. Swallowing of a battery can lead to chemical burns, perforation of soft tissues and death. Severe burns can occur within 2 hours of ingestion. In case of ingestion, seek medical attention immediately.

Section III – Composition / Information on ingredients

The regulations for substances are not applicable, as cells or batteries are articles under the relevant definitions. The chemicals mentioned are contained in a sealed steel can.
Risk of exposure occurs only if the cell / battery is mechanically or electrically abused.
Conditions to avoid: cells or batteries may explode when placed in a fire, when exposed to excessive heat, when opened or during inappropriate use.

Hazardous substances contained in the article according to UN-GHS (for information purposes only):

Ingredient **成分**	**Molecular formula** **分子式**	**CAS No.** **CAS 号**	**Weigh** **含量**
Lithium /锂	Li	7439-93-2	1.2-2.72%
Propylene Carbonate /碳酸丙烯酯	$C_4H_6O_3$	108-32-7	1.6-4.3%
Manganese dioxide /二氧化锰	MnO_2	1313-13-9	16-39%
1,2-Dimethoxyethane /乙二醇二甲醚	$C_4H_{10}O_2$	110-71-4	1.2-2.9%
Lithium perchlorate /高氯酸锂	$LiClO_4$	7791-03-9	0.8-2.1%
Graphite /石墨	C	7782-42-5	1.8-5%
1,3-dioxolane/1,3-二氧戊烷	C3H6O2	646-06-0	1.9-5%
Polypropylene /聚丙烯	$(C_3H_6)_n$	9003-07-0	1.5-5.4%
Poly(tetrafluoroethylene) /聚四氟乙烯	$(C_2F_4)_n$	9002-84-0	0.3-3.3%
Iron /铁	Fe	7439-89-6	40.31-69%

(EGDME is listed under ECHA Agency in the candidate list as a SVHC ((REACH Regulation 1907/2006/EC, Article 57c).
See Annex for information of lithium content per cell)

The UN GHS labelling information is not provided in this section as batteries are articles and therefore are exempted from the UN GHS labelling requirements. Other labelling requirements apply for batteries according to EU Regulation 2023/1542.

The chemicals mentioned in section 3 are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused or if it is ingested. Swallowing of a battery can lead to chemical burns, perforation of soft tissues and death. Severe burns

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can occur within 2 hours of ingestion. In case of ingestion, seek medical attention immediately.

Section IV - First Aid Procedures

None unless internal material exposure.

Skin contact:
Contents of an opened battery can cause irritation, wash immediately with soap and water. Remove contaminated clothing. If irritation persists, get medical help.

Eye contact:
Contents of an opened battery can cause severe irritation, IMMEDIATELY FLUSH THOROUGHLY WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION.

Ingestion:
CALL MEDICAL PRACTIONER IMMEDIAIELY

Inhalation:
Do not inhale leaked material. PROVIDE IMMEDIATELY FRESH AIR, IF IRRITATION PERSISTS, GET MEDICAL HELP.

Section V - Fire Fighting Instructions

5.1 Fire and explosion hazard:
The battery can leak and/or spout vaporized or decomposed and combustible electrolyte fumes in case of exposure above 70℃ resulting from inappropriate use or the environment. Cells or batteries may flame or leak potentially hazardous organic vapors if exposed to excessive heat or fire. Fire, excessive heat, or over voltage conditions may produce hazardous decomposition products. Damaged or opened cells or batteries can result in rapid heating and the release of flammable vapors. Vapors may be heavier than air and may travel along the ground or be moved by ventilation to an ignition source and flash backfire, excessive heat, or over voltage conditions may produce hazardous decomposition products. During water application, caution is advised as burning pieces of flammable particles may be ejected from the fire.

5.2 Extinguishing Media:
Suitable CO2 or dry chemical extinguishers
Dry chemical or Foam extinguishers.
Special Fire Fighting Procedure: WEAR NIOSH APPROVED SCBA & FULL PROTECTIVE EQUIPMENT.
Unusual Fire and Explosion Hazards: NONE SPECIFIED BY MANUFACTURER.

As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products.

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Section VI - Accidental Release

General
Chemical contents are sealed in metal can. But if the battery is mechanically or electrically abused, contents may leak out. In such case, take action as showing below.
The preferred response is to leave the area and allow the batteries to cool and the vapours to dissipate.

Personal precautions
Avoid skin and eye contact or inhalation of vapours. Temporary inhalation of odor and attaching of electrolyte to skin does not cause serious health hazard. Be sure the ventilation and washing out of electrolyte quickly.

Environmental precautions
Collect all released material in a plastic lined metal container and remove spilled liquid with absorbent. Doing this, protect your skin and eyes with gloves and protection glasses. Avoid direct contact with internal components. Specific environmental precaution is not necessary.

Section VII – Handling and Storage

When used correctly, Lithium-Metal Battery (Non-Rechargeable Single cell Battery) provides a safe and dependable source of power. However, if they are misused or abused, leakage, venting, or in extreme cases explosion and/or fire may result.

Make sure to observe amongst others, following warnings.

<u>Handling:</u>

- Do not insert batteries in reverse. Observe the polarity markings on battery and equipment
- Do not short-circuit batteries
- Do not charge batteries
- Do not deform or disassemble batteries
- Do not incinerate or dispose batteries in fire
- Do not place battery on metal case, metal plate or antistatic material
- Do not mix batteries types or brands. In case of multi cell application, replace all batteries to new at once when replacing used batteries
- Do not heat batteries or exposure direct sunlight
- Do not weld or solder directly to batteries
- A battery with a damaged container should NOT be exposed to water
- Do not allow children to replace batteries without adult supervision
- Keep batteries out of the reach of children. In case of ingestion of a cell or battery, the person involved should seek medical assistance immediately

- Equipment intended for use by children should have battery compartments which are tamper-proof
- Do not encapsulate and/or modify batteries
- Exhausted batteries should be immediately removed from equipment and disposed of

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- When discarding batteries with solder tags, insulate the tags by wrapping them with tape, foil, etc.

Storage:

- Store unused batteries in their original packaging and keep them away from metal objects which may short-circuit them. Storing unpackaged cells together could result in cell shorting and heat build-up.
- Store and display batteries in their original packaging in well ventilated, dry and cool conditions.
- Avoid storing or display batteries in direct sun or in places where they get exposed to rain
- Do not stack battery cartons on top of each other exceeding a specified height. The height is clearly dependent on the strength of the packaging. As for general rule this height should not exceed 1.5 m for cardboard packages or 3 m for wooden cases. The above recommendations are equally valid for storage conditions during prolonged transit. Thus, batteries should be stored away from ship engines and not left for long periods in unventilated metal box cars (containers) during summer.

Section VIII – Exposure Controls / Personal Protection

Respiratory protection (specify type):	Not necessary under conditions of normal use (see section VI)
Ventilation:	Not necessary under conditions of normal use (see section VI)
Protective gloves:	Not necessary under conditions of normal use (see section VI)
Eye protection:	Not necessary under conditions of normal use (see section VI)
Other protective clothing or equipment:	Not necessary under conditions of normal use

In the event, however, electrolyte should be released by mechanical or electrical abuse, use:

Respiratory protection	Mask (with a filter preferably)
Hand protection	Synthetic rubber gloves
Eye protection	Goggles or glasses (see section VI)

Section IX – Physical and Chemical Properties

The chemicals mentioned in Section II are contained in a sealed can. Under conditions of normal use, the chemicals will not be released.

Appearance:	Solid single cell, button cell
Nominal voltage:	Single cell: 3.0 volts

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Section X – Stability and Reactivity

Since batteries utilize a chemical reaction, they are actually considered a chemical product. As such, battery performance will deteriorate over time even if stored for a long period of time without being used.
However, lithium batteries are contained in a stable steel container and are sealed to avoid any chemical release under normal conditions of use.

Conditions to avoid: See Sections VII

Section XI – Toxicological Information

The chemicals mentioned in Section 3 are contained in a sealed can.
Risk of exposure occurs only if the battery is mechanically or electrically abused or if it is ingested.
Classification based on the hazardous substances contained in the product (electrode materials and electrolyte solution contained in the batteries):

Acute toxicity
Harmful if swallowed (Manganese Dioxide)
Harmful if inhaled (Manganese Dioxide, DME)

Skin corrosion/irritation
Causes skin irritation (Lithium)

Serious eye damage/irritation
Causes serious eye damage (Lithium)

Respiratory or skin sensitization
Based on classification of ingredients, the classification criteria are not met.

Germ cell mutagenicity
Based on classification of ingredients, the classification criteria are not met.

Carcinogenicity
Based on classification of ingredients, the classification criteria are not met.

Reproductive toxicity
May damage fertility. May damage the unborn child. (DME)

STOT-single exposure
Based on classification of ingredients, the classification criteria are not met.

STOT-repeated exposure
May cause damage to organs (Brain) through prolonged or repeated exposure (Inhalation) (Manganese Dioxide)

Aspiration hazard
Based on classification of ingredients, the classification criteria are not met.

Information on the likely routes of exposure
The chemicals mentioned in Section 3 are contained in a sealed can.
Risk of exposure occurs only if the battery is mechanically or electrically abused or if it is ingested (exposure via ingestion, skin or eye contact or inhalation). The most likely risk is acute exposure when a cell vents.

Symptoms related to the physical, chemical and toxicological characteristics

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No further information available.

Delayed and immediate effects and also chronic effects from short and long-term exposure

The chemicals mentioned in Section 3 are contained in a sealed can.
Risk of exposure occurs only if the battery is mechanically or electrically abused or if it is ingested (see Safety
precautions in Section VII). Swallowing of a battery can lead to chemical burns, perforation of soft tissues and death.
Severe burns can occur within 2 hours of ingestion. In case of ingestion, seek medical attention immediately.

Numerical measures of toxicity

No further information available.

Interactive effects

No further information available.
The chemicals mentioned in Section 3 are contained in a sealed battery can.
Under conditions of normal use, the chemicals will not be released.

Toxicity

Aquatic toxicity: Based on classification of ingredients, the classification criteria are not met.

Persistence and degradability

Not biodegradable.

Bioaccumulative potential

No further information available.

Mobility in soil

No further information available.

Other adverse effects

No further information available.

Section XII – Ecological Information

The chemicals mentioned in Section III are contained in a sealed can.
Under conditions of normal use, the chemicals will not be released.
It does not pose a physical or health risk to users, see section XIII for disposal.

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Section XIII – Disposal Considerations

Waste disposal method:
a) Be sure to comply with your federal, state and local regulation disposal of used batteries. Dispose in accordance with appropriate national and international regulations, below some references.

European Community: according to Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE), Annex II, batteries have to be removed from any separately collected WEEE. The removed batteries have to be treated according to the Battery Regulation (EU) 2023/1542.

US: Lithium batteries are neither specifically listed nor exempted from the Federal Environmental Protection Agency (US EPA) hazardous waste regulations. The only material of possible concern due to its reactivity is lithium metal. However, button cells contain so little lithium that they can be disposed of in the normal municipal waste stream.

California use only: Perchlorate Material – special handling may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate

Use a professional disposal firm for disposal of mass quantities of undischarged lithium batteries.

b) Open cells should be treated as hazardous waste

DO NOT INCINERATE or subject battery cells to temperatures in excess of 212°F (100°C). Such treatment can cause cell rupture.

Section XIV – Transportation Information

Dangerous Goods Classification	Class 9 lithium batteries
UN-No.	UN 3090, UN3091
Proper Shipping Name:	Lithium Metal Batteries

Lithium-Metal cells and batteries are subject to the following transport rules:

Method	Technical Guidelines	Remarks
Air	ICATO/IATA 67th Ed. 2026	PI968
Road and Rail Europe	ADR / RID 2025	SP188
Sea	IMDG Code 2025 (Amdmt.42-24)	SP188
USA	DOT 49 CFR	49 CFR Subchapter C, Part 171, Part 173

Please use the transportation information for reference. Exact packaging, shipping documentation and labelling requirements vary depending on energy content of cell/battery, quantity, method of shipping, airline or forwarder. Make sure to confirm concrete actions in advance with your shipping company.

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All cells and batteries of Jauch Quartz GmbH mentioned under Section I and Annex fulfil the conditions pursuant to the requirements for partly regulated transportation. UN Manual of Tests and Criteria Part III Subsection 38.3 (DGR 3.9.2.6).

Lithium-Metal cells and batteries are forbidden for transportation aboard passenger aircrafts.

Battery cartons should be handled with care. Rough handling may result in batteries being shorted or damaged. This may cause leakage, explosion or fire.

Section XV – Regulatory Information

- UN (United Nations): Recommendations on the Transportation of Dangerous Goods Model Regulations, eighth revised edition, New York and Geneva 2023
- ICAO (International Civil Aviation Organization): Technical Instructions for the safety transport of dangerous goods by air 2026
- IATA (International Air Transport Organization): Dangerous Goods Regulations 67th Edition; Effective January 1st, 2026
- ADR / RID 2025
- IMO (International Maritime Organization): International Maritime Dangerous Goods (IMDG) Code 2025 Edition (Amendment 42/24)
- EU Battery Regulation 2023/1542
- California Code of Regulations, title 22, division 4.5: Chapter 33 – Best Management Practices for Perchlorate Materials

Section XVI – Other Information

Jauch lithium button cells are registered under Underwriters Laboratories Inc. under UL file number MH62838.

This information has been compiled accurately to the best of our knowledge and belief. However, Jauch Quartz GmbH excludes any warranty for the accuracy, reliability or completeness of the information contained herein. It is the user´s responsibility to satisfy himself as to the suitability and completeness of this information for his particular use.

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Annex – list of lithium button cells and content of lithium

Model	Voltage (V)	Capacity (mAh)	Lithium content (g)
CR1025J	3.0	30	0.010
CR1216J	3.0	25	0.008
CR1220J	3.0	38	0.012
CR1225J	3.0	50	0.014
CR1616J	3.0	50	0.015
CR1620J	3.0	70	0.021
CR1632J	3.0	140	0.040
CR2016J	3.0	80	0.026
CR2025J	3.0	150	0.042
CR2032J	3.0	245	0.068
CR2320J	3.0	130	0.038
CR2325J	3.0	190	0.052
CR2330J	3.0	260	0.076
CR2335J	3.0	300	0.080
CR2354J	3.0	560	0.152
CR2430J	3.0	270	0.078
CR2450J	3.0	620	0.168
CR2477J	3.0	1000	0.286
CR3032J	3.0	500	0.136

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