

## Material Safety Data Sheet

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### 1. Identification of the substance/mixture and of the company/undertaking

<b>Product name:</b>	Lithium Iron Disulfide Battery, non-rechargeable
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BN	Size	Nominal Voltage	Capacity	Energy content	Lithium content
2542831	AAA	1.5 V	1100 mAh	1.65 Wh	0.45g

<b>Manufacturer:</b>	Conrad Electronic SE
<b>Address:</b>	Klaus-Conrad-Str. 1, D-92240 Hirschau
<b>Telephone:</b>	+49 (0) 9604 / 40 - 8988
<b>Date of issue:</b>	01.01.2022

### 2. Composition/Information on Ingredients

Ingredient	CAS#	Content (wt%)
Iron Disulfide	1309-36-0	30~40
Lithium Metal	7439-93-2	5~7
Organic Electrolyte Mixture	/	10~16
Iron	7439-89-6	30~40
Aluminum	7429-90-5	4~6
Carbon	7440-44-0	1~3
Polypropylene	9003-07-0	1~2
Polyethylene	9002-88-4	0.5~1
Other	/	0.5~1

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### 3. Hazards Identification

This battery contains lithium, organic solvent, and other combustible materials. For this reason, improper handling of the battery could lead to distortion, leakage\*, overheating, explosion, or fire and cause human injury or equipment trouble. Please strictly observe safety instructions. (\*leakage is defined as an unintended escape of liquid from a battery.)

### 4. First Aid Measures

None unless internal materials exposure. If contents are leaked out, observe following instructions:

#### Inhalation

Fumes can cause respiratory irritation. Remove to fresh air and consult a physician.

#### Skin

Immediately flush skin with plenty of water. If itch or irritation by chemical burn persists, consult a physician.

#### Eyes

Immediately flush eye with plenty of water for at least 15 minutes. Consult a physician immediately

#### Ingestion

If swallowing a battery, consult a physician immediately. If contents come into mouth, immediately rinse by plenty of water and consult a physician.

### 5. Fire Fighting Measures

#### Fire extinguisher:

Carbon dioxide; fire foam; dry sand; water spray and powder etc.

#### Fire fighting procedure:

Use self-contained breathing apparatus and full protective gear not to inhale harmful gas.

### 6. Accidental Release Measures

#### Steps to Be Taken in Case Material is Released or Spilled

Batteries that have leakage should be handled with rubber gloves. Avoid direct contact with electrolyte. Wear protective clothing and a positive pressure Self-Contained Breathing Apparatus (SCBA).

### 7. Handling and Storage

#### 1) Handling

Never swallow. Never charge. Never heat. Never expose to open flame. Never disassemble. Never reverse the positive and negative terminals when mounting. Never short-circuit the battery. Never weld the terminal or wire to the body of the battery directly. Never use different batteries together. Never touch the liquid leaked out of battery. Never bring fire close to battery liquid.

#### 2) Storage

Never let the battery contact with water. Never store the battery in hot and high humid place.

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### 8. Exposure Controls, Personal Protection

Respiratory Protection		N/A
Ventilation	Local Exhaust	N/A
	Mechanical	N/A
	Special	N/A
	Other	N/A
Eye Protection		N/A
Protective Glove		N/A
Other protective clothing		N/A

### 9. Physical/Chemical Characteristics

Nominal Voltage: 1.5V

### 10. Stability and Reactivity

#### Stability

Stable

#### Incompatibility

Water

#### Hazardous polymerization

Will not occur

#### Condition to avoid

See section 7.

#### Hazardous Decomposition or Byproducts

Shell damaged, the electrolyte solvent overflows

### 11. Toxicological Information

NA

### 12. Ecological Information

NA

### 13. Disposal condition

The battery may be regulated by national or local regulation. Please follow the instructions of proper regulation. As electric capacity is left in a discarded battery and it comes into contact with other metals, it could lead to distortion, leakage, overheating, or explosion, so make sure to cover the (+) and (-) terminals with friction tape or some other insulator before disposal.

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### 14. Transportation Information

\*Attention - the latest regulation shall prevail, and the specifications of transportation and its difference shall be confirmed with the carrier. All single lithium-metal cells or battery packs are considered as Class 9 according to international standards as shown below. The transport of lithium-metal cells or battery packs should meet requirements defined in International Transport Regulations. All our products (defined in chapter 1) and its packing forms meet the requirements of UN Manual of Test and Criteria, Part III, subsection.

Besides, the following transportation requirements shall be met once in transit/delivery.

#### Air Transport

All batteries including single cells with lithium content more than 0.3g but less than 1g or battery pack models with lithium content more than 0.3g but less than 2g, conform to 968 Section IB or II defined in Packing Instruction of IATA-DGR. All products and its packing forms meet the requirements of Section IB or II, though the battery itself is considered as dangerous goods, it can be transported without applying containers defined as Class II.

#### Sea Transport

All batteries, including single cells with lithium content less than 1g or battery pack models with lithium content less than 2g, conform to special regulation 188 and transport condition defined in IMDG-Code. It can be transported as non-dangerous goods.

UN No.	Proper Shipping Name/Description
UN 3090	Lithium Metal Batteries
UN 3091	Lithium Metal Batteries Contained in Equipment
UN 3091	Lithium Metal Batteries Packed with Equipment

#### Related Regulations:

Transport form	Relevant agencies/Issued documents
Air transport	ICAO/TI IATA/DGR
Sea transport	IMO/ IMDG Code
Land transport (within Europe)	RID, ADR
US	USDOT/ DOT 49 CFR
	UN: Recommendations on the transport of dangerous goods: Manual of Tests and Criteria 5th revised edition Amendment 1 [ST/SG/AC.10/11/Rev.5/Amend.1]: Part III, Subsection 38.3

\*Dangerous Goods Regulations-63rd Edition Effective 1 January 2022: International Air Transport Association (IATA)/Packaging Instructions 968-970

\*IMDG Code 40-20

\*RID - COTIF 1999/Appendix C-RID/Article 5

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### **15. Regulatory Information**

USA EPA Mercury Containing & Rechargeable Battery Management Act of 1996: No mercury added

EU Battery Directive 2006/66/EC Amended 2013/56/EU: The battery is compliant with all aspects of the Directive

### **16. Other Information**

If you want further information, please contact us.