



# Material Safety Data Sheet

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## 1. Product & Company Identification

<b>Product:</b>	Lithium Manganese Dioxide Rechargeable Button cell
<b>Manufacturer:</b>	Conrad Electronic SE
<b>Nominal voltage:</b>	3 V
<b>Nominal capacity:</b>	65 mAh
<b>Address:</b>	Klaus-Conrad-Str. 1, D-92240 Hirschau
<b>Telephone:</b>	+49 (0) 9604 / 40 - 8988
<b>Date of issue:</b>	29.09.2016

## 2. Composition/Information on the Ingredients

Constitution material	Composition gross weight percentage	Composition material	CAS No	Occupies material percentage	Hazard matter
shell	58%	304BA		92%	none
septum	1%	PP		100%	none
cathode	2%	Li		100%	none
anode	32%	MnO2		90%	none
electrolyte	7%	PC		60%	none

## 3. Hazards Identification

For health: no effect

For use: short circuit or over charge to detonate and burnt

## 4. Emergency and First Aid Measures

### Skin contact:

Remove contaminated clothing and shoes. Wash affected area with soap and water until no evidence of the chemical remains. Wash clothing before reuse. Get medical attention if irritation develops.

### Eye contact:

Flush thoroughly with water for at least 15 minutes, occasionally lifting upper and lower lids, until no evidence of the chemical remains. Get medical attention if irritation develops.

### Ingestion:

Treat symptomatically and supportively. Get medical attention.



## Material Safety Data Sheet

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### 5. Fire Fighting Measures

**Autoignition temperature:**

Not applicable

**Extinguishing media:**

Not flammable. However if involved in a fire, use media appropriate for surrounding fire.

**Special fire fighting procedures:**

Fire fighters should wear full protective niosh approved self-contained breathing apparatus.

**Unusual fire and explosion hazards :**

Moderate fire hazard by chemical reaction. Manganese dioxide is an oxidizer and may contribute to the intensity of the surrounding fire.

### 6. Accidental Release Measures

Wear suitable protective equipment. Keep easily oxidizable materials away from spill. Carefully place spilled material into a clean, dry container and cover. Reclaim or place in suitable container for disposal.

### 7. Handling and Storage

- A. Attention under storage condition matters needing attention: ventilated, dry
- B. Under storage condition matters needing attention illustration, reason and concrete instance

### 8. Exposure Controls/Personal Protection

**Respiratory protection:**

Not available

**Ventilation:**

Use local or general dilution ventilation to maintain exposure below the exposure limits

**Protective gloves:**

Wears rubber resistant glove

**Eye protection:**

Not available

**Other protective clothing or equipment:**

Do not smoke

Do not bring food and water at work



## Material Safety Data Sheet

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### 9. Physical/Chemical Characteristics

Physical State:	Solid
Appearance:	colorless
Odor:	Not available.
pH:	7-8
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Evaporation Rate:	Not available.
Viscosity:	Not available.
Boiling Point:	Not available
Decomposition Temperature:	Not available.
Solubility:	Not available.

### 10. Stability and Reactivity

Stability:	Stable
Conditions to avoid:	Be heated up

### 11. Toxicological Information

Epidemiology:	Not available.
Teratogenicity:	Not available.
Reproductive Effects:	Not available.
Mutagenicity:	Not available.
Neurotoxicity:	Not available.
Other Studies:	Not available

### 12. Ecological Information

Not available.

### 13. Disposal Considerations

Discard: the battery to give back the special department of the callback battery



# Material Safety Data Sheet

## 14. Transport Information

Shipping Name: Lithium Batteries  
 UN Number: UN3090 (UN3091 for Lithium batteries in equipment)  
 Hazard Classification: Class 9 (Miscellaneous)

Organizations governing the transport of lithium batteries:

Area	Method	Organization	Special Provision
International	Air	IATA, ICAO	A45
International	Water	IMO	188
USA	Air, Rail, Highway, Water	DOT	49 CFR Section 173.185

Their regulations are based on the UN Recommendations. Each special provision provides specifications on exceptions and packaging for lithium batteries shipping. All our batteries meet all special provisions.

Ref) Summary of A45 (IATA Dangerous Goods Regulations 55th Edition 2014)

If all of following 3 requirements is satisfied, lithium batteries can be transported as no dangerous goods.

1) Lithium weight or equivalent lithium content\* must be less than value in table.

	Lithium Cell/Battery (Lithium weight)	Lithium ion Cell/Battery (Equivalent lithium content)
Cell	1 g or less	1,5 g or less
Battery	2 g or less	8 g or less

\*Equivalent lithium content (g) is calculated as 0.3 (g/Ah) times the rated capacity (Ah).

2) Shipment contains no item listed under IATA DGR Special Provision A154 and meet all requirements under UN Manual of Tests and Criteria Part III, subsection 38.3

3) Each package containing 24 cells or 12 batteries:

- a) Be marked to indicate that it contains lithium batteries, and that special procedures be followed in the event that the package is damaged.
- b) Be accompanied by a shipping paper explaining that the cells and batteries are excepted from regulations
- c) Weight no more than 30 kg (gross weight).
- d) Be capable of withstanding a 1.2 m drop test in any orientation without shifting of the contents that allow short-circuiting, and without release of package contents.

Because the consignor has to take the responsibility, the customer has to confirm the exception condition when shipping.

## 15. Regulatory Information

- 1. GB 10758-89
- 2. QB/T 2389-98

## 16. Other Information

None