



## Material Safety Data Sheet

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### 1. Product & Company Identification

<b>Product:</b>	Li-ion polymer battery, rechargeable
<b>Nominal voltage:</b>	3.7 V
<b>Nominal capacity:</b>	300 mAh, 1.11 Wh
<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>	25.02.2019

### 2. Composition Information

Chemical Composition	CAS No.	Weight (%)
Lithium cobaltate	12190-79-3	15 -40
Graphite	7782-42-5	10-30
Phosphate(1-),hexafluoro-, lithium	21324-40-3	10-30
Copper	7440-50-8	7-13
Aluminium	7429-90-5	5-10
Nickel	7440-02-0	1-5

The exact percentage (concentration) of composition has been withheld as a trade secret.



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### 3. Hazards Identification

**Emergency overview:**

N/A

**Classification according to GHS**

Not a dangerous substance according to GHS

**Label elements:**

Hazard pictogram(s): Not available

Signal word: Not available

Hazard statement(s): Not available

**Precautionary statement(s):**

Prevention: Not available

Response: Not available

Disposal: Not available

**Environmental hazards:**

No relevant information

**Important symptoms:**

See section 11 for more information

### 4. First Aid Measures

**Eye contact**

Flush eyes with plenty of water for least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin contact**

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

**Inhalation**

Remove from exposure and move to fresh air immediately. Use oxygen if available.

**Ingestion**

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.



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### 5. Fire Fighting Measures

**Flash Point**

N/A

**Auto-Ignition Temperature**

N/A

**Extinguishing Media**

H<sub>2</sub>O, CO<sub>2</sub>

**Special Fire-Fighting Procedures**

Self-contained breathing apparatus

**Unusual Fire and Explosion Hazards**

Cell may vent when subjected to excessive heat-exposing battery contents

**Hazardous Combustion Products**

Carbon monoxide, carbon dioxide, lithium oxide fumes.

### 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:**

If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate. Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed with sand, earth or other inert substance and contaminated area should be ventilated meantime.

**Environment precautions:**

Do not allow product to reach sewage system or any water source.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:**

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container.

Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.



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### 7. Handling and Storage

#### Handling

The battery should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire.

Do not crush or puncture the battery, or immerse in liquids.

#### Storage

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

#### Other Precautions

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

### 8. Exposure Controls/Personal Protection

#### Engineering Controls:

Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor.

Keep away from heat and open flame. Store in a cool, dry place.

#### Personal Protective Equipment Respiratory Protection:

Not necessary under normal conditions.

#### Skin and body Protection:

Not necessary under normal conditions, Wear suitable protective clothing and gloves if handling an open or leaking battery.

#### Hand protection:

Wear suitable gloves if handling an open or leaking battery.

#### Eye Protection:

Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.

#### Other Protective Equipment:

Have a safety shower and eye wash fountain readily available in the immediate work area.

#### Hygiene Measures:

Do not eat, drink, or smoke in work area. Maintain good housekeeping.

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### 9. Physical and Chemical Properties

Form	Solid
Color	Silver
Odour	Not available
pH	Not available
Melting point/freezing point	Not available
Boiling Point and Boiling range	Not available
Flash Point	Not available
Upper/lower flammability or explosive limits	Not available
Vapor Pressure	Not available
Vapor Density	Not available
Relative density	Not available
Solubility in Water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Evaporation rate	Not available
Flammability (soil, gas)	Not available
Viscosity	Not available

### 10. Stability and reactivity

#### Stability

The product is stable under conditions described in Section 7.

#### Conditions to Avoid

Heat above 70°C or incinerate. Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.

#### Incompatible Materials

Oxidizing agents, acid, base.

#### Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.

#### Possibility of Hazardous Reaction

Not Available



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### 11. Toxicological Information

#### Irritation

Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.

#### Sensitization

Not Available

#### Neurological Effects

Not Available

#### Teratogenicity

Not Available

#### Reproductive Toxicity

Not Available

#### Mutagenicity (Genetic Effects)

Not Available

#### Toxicologically Synergistic Materials

Not Available

### 12. Ecological Information

#### Ecological Toxicity

Not Available

#### Mobility in soil

Not Available

#### Persistence and Degradability

Not Available

#### Bioaccumulation potential

Not Available

#### Other Adverse Effects

Not Available



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### 13. Disposal Considerations

#### Product disposal recommendation

Observe local, state and federal laws and regulations.

#### Uncleaned packaging recommendation

Disposal must be made according to official regulations.

### 14. Transport Information

Label for conveyance	Lithium Battery Label
UN Number	UN 3480 or UN 3481
Transport hazard class(es)	9
Packing group	--
Marine pollutant	No
UN Proper shipping name	Lithium ion Batteries (Including lithium ion polymer batteries) Lithium ion Batteries packed with equipment (Including lithium ion polymer batteries) Lithium ion Batteries contained in equipments (Including lithium ion polymer batteries)

#### Transport information:

The polymer Li-ion Battery is tested and has passed in accordance with UN manual of Tests and Criteria, Part III, subsection 38.3. The goods shall be complied with the requirements of Section IB-II of Packing Instruction 965 or of Section II of Packing Instruction 966 967 of 60th DGR Manual of IATA or special provision 188 of IMDG CODE (Amdt. 39-18).

Separate Lithium-ion batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport, ensure that the goods will not falling, dropping, and breakage, Prevent collapse of cargo piles and wet by rain.

#### Transport Fashion:

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



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### 15. Regulatory information

#### Law information

Dangerous Goods Regulations

Recommendation on the Transport of Dangerous Goods Model Regulations

International Maritime Dangerous Goods

Technical Instructions for the Safe Transport of Dangerous Goods

Classification and code of dangerous Goods

Occupational Safety and Health Act (OSHA)

Toxic Substance Control Act (TSCA)

Consumer Product Safety Act (CPSA)

Federal Environmental Pollution Control Act (FEPCA)

The Oil Pollution Act (OPA)

Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)

Resource Conservation and Recovery Act (RCRA)

Safety Drinking Water Act (CWA)

California Proposition 65

Code of Federal Regulations (CFR)

In according with all Federal, State and local laws.

### 16. Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation.

This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.