

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

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## 1. Product and Company Identification

### 1.1. Product identifier

Lithium-Thionylchloride-Battery (LiSoCl<sub>2</sub>)  
P/N: 19211110  
E.V.E. ER14250 1/2AA 3,6V

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Lithium-Thionylchloride-Battery

### 1.3. Details of the supplier of the safety data sheet:

#### Supplier:

Die Batterieprofis GmbH  
Adam-Ries-Straße 6 D-09117 Chemnitz

Fon: +49 (0) 371 90963 0  
Fax: +49 (0) 371 90963 29  
Email: info@batterieprofis.de

#### Informing department:

ASS Magerl GmbH  
Otto-Schmerbach-Str. 17 D-09117 Chemnitz

Fon: 0049 / 371 - 774 10 60  
Email: mail@ass-magerl.de

### 1.4 EMERGENCY TELEPHONE NUMBER:

Swiss Toxicological Information Center- 24 h Service Tel.: 0041 / 44 251 51 51 (international)

## 2. Hazards identification

### 2.1. Classification of the substance or mixture:

In accordance with article 3 (3) of REACH, this / these item(s) are articles.  
An article is not subject to the mandatory marking regulations applicable to dangerous substances.  
The product is not classified according to the Globally Harmonized System (GHS).

### 2.2. Label elements

|                    |      |
|--------------------|------|
| GHS label elements | Void |
| Hazard pictograms  | Void |
| Signal word        | Void |
| Hazard statements  | Void |

### 2.3. Other hazards

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

For the battery chemical materials are stored in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use there is no physical danger of ignition or explosion and chemical danger of hazardous materials leakage.

It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Elektrolyte is flammable. In case of electrolyte leakage move the battery from fire immediately.

However if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery case will be broken at the extreme, hazardous materials may be released.

Moreover, if heated strongly by a surrounding fire, acrid gas may be emitted.

- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

### 3. Composition/ Information on Ingredient

#### 3.1 . Substances

Chemical characterization: Mixtures

| Dangerous components:               |                                                                                                          |                         |
|-------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------|
| CAS: 7439-93-2<br>EINECS: 231-102-5 | Lithium<br>Water-react. 1, Skin Corr. 1B<br>H260<br>H314                                                 | 3.5 ~ 5.0% Weight       |
| CAS: 1333-86-4<br>EINECS: 215-609-9 | Carbon                                                                                                   | 3.0 ~ 6.0 % Weight      |
| CAS: 7719-09-7<br>EINECS: 231-748-8 | Thionyl Chloride<br>Acute Tox. 4, Acute Tox. 3, Skin Corr. 1B, STOT SE 3<br>H302<br>H331<br>H314<br>H335 | 40.0 ~ 45.0 %<br>Weight |
| CAS: 7446-70-0<br>EINECS: 231-208-1 | Aluminium Chloride<br>Skin Corr. 1B<br>H314<br>H318                                                      | 1 ~ 5 % Weight.         |
| CAS: 9002-84-0                      | Tetrafluoroethylene                                                                                      | N/A                     |

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

|                                     |                                                                                                                                                                                                                                                                                                                                                                          |     |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| CAS: 7447-41-8                      | Lithium Chloride<br>Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2<br>H302<br>H315<br>H319                                                                                                                                                                                                                                                                                    | N/A |
| CAS: N/A                            | Stainless Steel                                                                                                                                                                                                                                                                                                                                                          | N/A |
| CAS: N/A                            | Glass                                                                                                                                                                                                                                                                                                                                                                    | N/A |
| CAS: 7440-02-0<br>EINECS: 231-111-4 | Nickel<br>Sensitisation, respiratory (1, 1A, 1B)<br>Sensitisation, skin (1, 1A, 1B)<br>Carcinogenicity (2)<br>Specific target organ toxicity, single exposure (1) (Kidney)<br>Specific target organ toxicity, repeated exposure 1)<br>(respiratory system)<br>Hazardous to the aquatic environment, long-term hazard (4)<br>H334<br>H317<br>H351<br>H370<br>H372<br>H413 | N/A |

## 4. First-aid measures

### 4.1 Description of first aid measures

#### • General information

This product contains an organic electrolyte. If the electrolyte is leaking out of the battery pack, the following measures have to be taken.

#### • After inhalation

Take affected persons into the open air and position comfortably Supply fresh air or oxygen; call for doctor. In case of unconsciousness bring patient into stable side position for transport.

#### • After skin contact

Instantly wash with water and soap and rinse thoroughly. If skin irritation persist, call a physician.

#### • After eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### • After swallowing

Do not induce vomiting, Seek immediate medical advice.

### 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

### 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

---

## **5. Fire-fighting Measures**

### **5.1 Extinguishing media**

Suitable extinguishing media

CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet and foam.

Unsuitable extinguishing media

Water with full jet.

### **5.2 Special hazards arising from the substance or mixture**

Hazardous combustion products

Formation of toxic gases is possible during heating or in case of fire

### **5.3 Advice for fire-fighters**

Protective equipment:

In the event of fire, wear self-contained breathing apparatus. Wear full protective suit.  
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

## **6. Accidental Release Measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away. Keep away from ignition sources.  
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Keep people at a distance and stay on the windward side.

### **6.2 Environmental precautions**

Do not allow to enter the ground/soil.

### **6.3 Methods and material for containment and cleaning up**

Absorb liquid components with liquid-binding material. Collect mechanically.

### **6.4 Reference to other sections**

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

---

## **7. Handling and Storage**

### **7.1. Precautions for safe handling**

Do not soak in water or seawater. Do not expose to strong oxidizers.  
Do not give a strong mechanical shock or fling. Never disassemble, modify or deform.  
Do not connect the positive terminal to the negative terminal with electrically conductive material. Use only the chargers / electric tools specified to charge or discharge the battery.  
No special precautions necessary if used correctly.

#### **• Information about protection against explosions and fires:**

Do not throw into fire or expose to high temperatures (>85 °C).  
Do not connect the positive terminal to the negative terminal with electrically conductive material.

### **7.2. Conditions for safe storage, including any incompatibilities**

#### **Requirements to be met by storerooms and containers:**

Avoid direct sunlight, high temperature, high humidity.  
Store in a cool place (temperature: -20 °C ~ 35 °C, humidity: 45 - 85%)

#### **Information about storage in one common storage facility:**

Do not store together with oxidizing and acidic materials. Store away from water.  
Do not store together with electrically conductive materials.

#### **Further information about storage conditions:**

The battery should be stored at 30 to 50% of the charging capacity. Avoid storing in places where it is exposed to static electricity.  
Protect from heat and direct sunlight.

### **7.3. Specific end uses**

As per VCI (1991) storage classification concept 11

## **8. Exposure Controls and Personal Protection**

### **8.1. Control parameters**

#### **Additional information about design of technical systems:**

No further data; see item 7.

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

---

**Components with limit values that require monitoring at the workplace:**

No technical measures are necessary during normal use. In case of leakage of substances contained within the cell, the information below may be useful.

**Additional information:**

The lists that were valid during the compilation were used as basis.

**8.2. Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures should be adhered to general rules for handling chemicals.

• **Breathing equipment:**

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

• **Protection of hands:**

Protective gloves

Only use chemical-protective gloves with CE-labelling of category III. EN 374

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

• **Material of gloves**

Nitrile rubber, NBR

Recommended thickness of the material: 0,12 mm

• **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• **Eye protection:**

Tightly sealed safety glasses

• **Body protection:**

Protective work clothing

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

---

## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

- **General Information**

- **Appearance:**

|         |              |
|---------|--------------|
| Form:   | plastic case |
| Colour: | different    |

- **Odour:** Odourless

- **Odour threshold:** Not determined

- **pH-value:** Not applicable

- **Change in condition**

|                              |                |
|------------------------------|----------------|
| Melting point/Melting range: | Not applicable |
| Boiling point/Boiling range: | Not applicable |

- **Flash point:** Not applicable

- **Inflammability (solid, gaseous)** Not determined

- **Ignition temperature:** Not determined

- **Decomposition temperature:** Not determined

- **Self-inflammability:** Product is not selfigniting.

- **Danger of explosion:** Risk of explosion by shock, friction, fire or other sources of ignition.

- **Critical values for explosion:**

|        |                |
|--------|----------------|
| Lower: | Not determined |
| Upper: | Not determined |

- **Vapour pressure:** Not applicable

- **Density** Not determined

- **Relative density** Not applicable

- **Vapour density** Not applicable

- **Evaporation rate** Not applicable

- **Solubility in / Miscibility with Water:** Insoluble

- **Partition coefficient (n-octanol/water):** Not applicable

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

---

- **Viscosity:**
  - dynamic:** Not applicable
  - kinematic:** Not applicable
- **Solvent content:**
  - Organic solvents:** 0,0 %

**9.2. Other information:**

No further relevant information available.

## 10. Stability and Reactivity

**10.1. Reactivity**

No further relevant information available.

**10.2. Chemical stability**

**Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

**10.3. Possibility of hazardous reactions**

No dangerous reactions known

**10.4. Conditions to avoid:**

No further relevant information available.

**10.5. Incompatible materials:**

Conductive materials, water, seawater, strong oxidizers and strong acids

**10.6. Hazardous decomposition products:**

Acrid or harmful gas is emitted during fire.

## 11. Toxicological Information

**11.1. Information on toxicological effects**

**Primary irritant effect:**

**On the skin:**

This product contains an organic electrolyte. If the electrolyte is leaking out of the battery pack, the following effects are known when getting into contact:

Irritant to skin and mucous membranes

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

---

**On the eye:**

Irritant effect

**Sensitization:**

No sensitizing effect known.

**Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

## 12. Ecological Information

### 12.1 Toxicity

**Aquatic toxicity:**

No further relevant information available.

### 12.2 Persistence and degradability

No further relevant information available.

### 12.3 Bioaccumulative potential

No further relevant information available.

### 12.4 Mobility in soil

No further relevant information available.

### 12.5 Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 12.6 Other adverse effects:

**General notes:**

Do not allow battery packs to penetrate the soil.

The battery cell may corrode and electrolyte may leak.

## 13. Disposal Considerations

### 13.1 Waste treatment methods

**Recommendation**

Dispose of this battery pack according to national regulations or return the used battery pack to

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

supplier.

#### European waste catalogue

16 06 05 other batteries and accumulators  
20 01 34 batteries and accumulators other than those mentioned in 20 01 33

#### Uncleaned packagings:

##### Recommendation:

Disposal must be made according to official regulations.  
Dispose of packaging according to regulations on the disposal of packagings.

## 14. Transport Information

Lithium metal cells and batteries are given UN numbers as shown in the below table.

For the international transport of lithium batteries, they must comply with these regulations: the International Maritime Dangerous Goods (IMDG) Code by International Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by International Civil Aviation Organization (ICAO). These regulations are based on the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria.

Lithium batteries which meet the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group II hazardous goods.

For transported air, Lithium-metal Cells/Batteries must comply with Section IA or Section IB of PI968 accordingly.

Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.

Each package must be capable of withstanding a 1.2 m drop test in any orientation without:  
-damage to cells or batteries contained therein;  
-shifting of the contents so as to allow battery to battery (or cell to cell) contact;  
-release of contents.

The goods are primary lithium batteries. Each package must be marked indicating that it contains lithium batteries and that special procedures should be followed in the event that the package is damaged. Each shipment must be accompanied with a document indicating that the packages contain lithium batteries and that special procedures should be followed in the event a package is damaged.

| UN No. | Proper Shipping Name / Description               |
|--------|--------------------------------------------------|
| 3090   | Lithium metal batteries                          |
| 3091   | Lithium metal batteries contained in equipment   |
| 3091   | Lithium metal batteries contained with equipment |

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

Related regulations: Following regulations shall be cited and considered.

| <b>Transportations</b>             | <b>Related organization / Issue documents</b>                                                                                                                                                                                                   |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air transport<br>(by airplane)     | ICAO (International Civil Aviation Organization) / TI (Technical Instruction) IATA (International Air Transport Association) / DGR (Dangerous Goods Regulations)                                                                                |
| Maritime transport<br>(by ship)    | IMO (International Maritime Organization) / IMDG Code (International Maritime Dangerous Goods Code)                                                                                                                                             |
| Land transport<br>(Intra-European) | RID (International Carriage of Dangerous Goods by Rail) , ADR (International Carriage of Dangerous Goods by Road)                                                                                                                               |
| USA / UN                           | USDOT (US Department of Transportation) / DOT 49 CFR (US law)<br>UN: Recommendations on the transport of dangerous goods: Manual of Tests and Criteria the latest edition Amendment 1 [ST/SG/AC.10/11/Rev.5/Amend.1]: Part III, Subsection 38.3 |

## 15. Regulatory Information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### National regulations

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment
- Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE)
- Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC

#### Other regulations, limitations and prohibitive regulations

None

#### Substances of very high concern (SVHC) according to REACH, Article 57

None

#### Chemical safety assessment:

not required.

## 16. Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Print date: %%date%%  
Revision date: 29.07.2024  
Version: 01

---

### **Abbreviations and acronyms**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

### **16.2 Relevant R-, H- and EUH-phrases (number and full text)**

- |      |                                                                               |
|------|-------------------------------------------------------------------------------|
| H260 | In contact with water releases flammable gases which may ignite spontaneously |
| H302 | Harmful if swallowed                                                          |
| H314 | Causes severe skin burns and eye damage                                       |
| H315 | Causes skin irritation                                                        |
| H317 | May cause an allergic skin reaction                                           |
| H318 | Causes serious eye damage                                                     |
| H319 | Causes serious eye irritation                                                 |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled     |
| H335 | May cause respiratory irritation                                              |
| H351 | Suspected of causing cancer                                                   |
| H370 | Causes damage to organs (kidney)                                              |
| H372 | Causes damage to organs through prolonged or repeated exposure                |
| H413 | May cause long lasting harmful effects to aquatic life                        |