Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Trade name/designation:
Lithiumchloridlösung

Article No.:
0554 0635

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

Relevant identified uses:

Product Categories [PC]
PC 21: Laboratory chemicals

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):
Testo AG
Testo-Str. 1
79853 Lenzkirch
Germany

Telephone: +49 (0)7653 / 681-0
E-mail: info@testo.de
Website: www.testo.de

E-mail (competent person): substances@testo.de
Vergiftungs-Informations-Zentrale Freiburg Mathildenstr. 1 79106 Freiburg giftinfo@uniklinik-freiburg.de

1.4. Emergency telephone number

24h: +49-(0)761-19240, +49 (0)7653 / 681-0 (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
<th>Hazard statements</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation (Skin Irrit. 2)</td>
<td>H315: Causes skin irritation.</td>
<td>Calculation method.</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation (Eye Irrit. 2)</td>
<td>H319: Causes serious eye irritation.</td>
<td>Calculation method.</td>
</tr>
<tr>
<td>Acute toxicity (oral) (Acute Tox. 4)</td>
<td>H302: Harmful if swallowed.</td>
<td>Calculation method.</td>
</tr>
</tbody>
</table>

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

![Exclamation mark](ghs07)

Exclamation mark.

Signal word: Warning

Hazard components for labelling:
lithium chloride

<table>
<thead>
<tr>
<th>hazard statements for health hazards</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

Supplemental Hazard information (EU): -

Precautionary statements Prevention

P280.2  Wear protective gloves and eye/face protection.
Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Lithiumchloridlösung

Revision date: 20-Apr-2016 Version: 1.1 Print date: 02-May-2016

Precautionary statements

<table>
<thead>
<tr>
<th>Response</th>
<th>Precautionary statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>P301 + P312.1</td>
<td>IF SWALLOWED: Call a POISON CENTER if you feel unwell.</td>
</tr>
<tr>
<td>P302 + P352.1</td>
<td>IF ON SKIN: Wash with plenty of soap and water.</td>
</tr>
<tr>
<td>P305 + P351 + P338</td>
<td>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
<tr>
<td>P332 + P313</td>
<td>If skin irritation occurs: Get medical advice/attention.</td>
</tr>
<tr>
<td>P337 + P313</td>
<td>If eye irritation persists: Get medical advice/attention.</td>
</tr>
</tbody>
</table>

2.3. Other hazards

Adverse physicochemical effects:
No information available.

Adverse human health effects and symptoms:
No information available.

Adverse environmental effects:
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

Other adverse effects:
No information available.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Description:
saturated aqueous solution

Hazardous ingredients / Hazardous impurities / Stabilisers:

<table>
<thead>
<tr>
<th>product identifiers</th>
<th>Substance name</th>
<th>Classification according to Regulation (EC) No 1272/2008 [CL P]</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.: 7447-41-8</td>
<td>lithium chloride</td>
<td>Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2</td>
<td>≥ 45 – ≤ 90 Wt %</td>
</tr>
</tbody>
</table>

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Remove victim out of the danger area.
Remove contaminated, saturated clothing. If unconscious place in recovery position and seek medical advice.
Do not leave affected person unattended.

Following inhalation:
Provide fresh air. In case of respiratory tract irritation, consult a physician.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. If skin irritation or rash occurs: Get medical advice/attention.

After eye contact:
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

After ingestion:
Rinse mouth. Get medical advice/attention if you feel unwell.

Self-protection of the first aider:
Use personal protection equipment.

4.2. Most important symptoms and effects, both acute and delayed
Skin corrosion/irritation Serious eye damage/eye irritation

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.
SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
Co-ordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture
The product itself does not burn.
Hazardous combustion products:
No information available.

5.3. Advice for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing.

5.4. Additional information
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Personal precautions:
Remove persons to safety.
Protective equipment:
Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2. For emergency responders
Personal protection equipment:
Personal protection equipment: see section 8

6.2. Environmental precautions
Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up
For containment:
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
For cleaning up:
Water (with cleaning agent)

6.4. Reference to other sections
Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

6.5. Additional information
Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Protective measures
Advises on safe handling:
Wear personal protection equipment (refer to section 8).
Fire prevent measures:
No special measures are necessary.
Usual measures for fire prevention.

Advises on general occupational hygiene
When using do not eat, drink or smoke. Avoid contact with eyes and skin.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures and storage conditions:
Keep container tightly closed in a cool, well-ventilated place.
Requirements for storage rooms and vessels:
Keep/Store only in original container.
Keep the packing dry and well sealed to prevent contamination and absorption of humidity.
storage temperature 5 - 30 °C
Protect from sunlight.
Keep away from heat.
Storage class: 12 – non-combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)
No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
8.1.1. Occupational exposure limit values
No data available
8.1.2. Biological limit values
No data available
8.1.3. DNEL-/PNEC-values

<table>
<thead>
<tr>
<th>Substance name</th>
<th>DNEL value</th>
<th>DNEL type</th>
<th>Exposure route</th>
</tr>
</thead>
<tbody>
<tr>
<td>lithium chloride</td>
<td>73 mg/kg bw/day</td>
<td>DNEL worker</td>
<td>DNEL long-term dermal (systemic)</td>
</tr>
<tr>
<td>lithium chloride</td>
<td>0.01 g/m³</td>
<td>DNEL worker</td>
<td>DNEL long-term oral (repeated)</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
8.2.1. Appropriate engineering controls
Technical measures and the application of suitable work processes have priority over personal protection equipment.
8.2.2. Personal protection equipment
Eye/face protection:
Eye glasses with side protection DIN EN 166
Skin protection:
Tested protective gloves must be worn DIN EN 374
Suitable material: NBR (Nitrile rubber)
Breakthrough time (maximum wearing time) 480 min
In the case of wanting to use the gloves again, clean them before taking off and air them well.
Breakthrough times and swelling properties of the material must be taken into consideration.
Respiratory protection:
Usually no personal respirative protection necessary.
8.2.3. Environmental exposure controls
No information available.

8.3. Additional information
No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance
Physical state: liquid
Odour: odourless
Colour: colourless
Odour threshold: not applicable
Safety relevant basis data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>at °C</th>
<th>Method</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>6</td>
<td>20 °C</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freezing point</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>≈ 100 °C</td>
<td></td>
<td>The statement is derived from the properties of the single components.</td>
</tr>
<tr>
<td>Decomposition temperature (°C):</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ignition temperature in °C</td>
<td>not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>23 hPa</td>
<td>20 °C</td>
<td></td>
</tr>
<tr>
<td>Vapour density</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water solubility (g/L)</td>
<td>completely miscible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.2. Other information
Water content (%) 88
Solvent content (%) 0

SECTION 10: Stability and reactivity

10.1. Reactivity
This material is considered to be non-reactive under normal use conditions.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
No information available.

10.5. Incompatible materials
No information available.

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance name</th>
<th>Toxicological information</th>
</tr>
</thead>
<tbody>
<tr>
<td>7447-41-8</td>
<td>lithium chloride</td>
<td>LD$_{50}$ oral: 526 mg/kg (Rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC$_{50}$ inhalative: $&gt;5.57$ mg/l (Rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD$_{50}$ dermal: $&gt;2,000$ mg/kg (Rat)</td>
</tr>
</tbody>
</table>

Acute oral toxicity:
Harmful if swallowed.

Acute dermal toxicity:
The classification criteria for this hazard class are not met by definition.

Acute inhalation toxicity:
The classification criteria for this hazard class are not met by definition.
Skin corrosion/irritation:
Causes skin irritation.

Eye damage/irritation:
Causes serious eye irritation.

Respiratory or skin sensitisation:
The classification criteria for this hazard class are not met by definition.

Germ cell mutagenicity:
The classification criteria for this hazard class are not met by definition.

Carcinogenicity:
The classification criteria for this hazard class are not met by definition.

Reproductive toxicity:
The classification criteria for this hazard class are not met by definition.

STOT-single exposure:
The classification criteria for this hazard class are not met by definition.

STOT-repeated exposure:
The classification criteria for this hazard class are not met by definition.

Aspiration hazard:
The classification criteria for this hazard class are not met by definition.

Additional information:
No data available

SECTION 12: Ecological information

12.1. Toxicity
Assessment/classification:
The classification criteria for this hazard class are not met by definition.

12.2. Persistence and degradability
Biodegradation:
The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential
Accumulation / Evaluation:
No indication of bioaccumulation potential.

12.4. Mobility in soil
No adsorption in soil or sediment.

12.5. Results of PBT and vPvB assessment
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.1.1. Product/Packaging disposal
Waste codes/waste designations according to EWC/AVV

Waste code product:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>06 03 99</td>
<td>wastes from the MFSU of salts and their solutions and metallic oxides: Wastes not otherwise specified</td>
</tr>
</tbody>
</table>

Waste treatment options

Appropriate disposal / Product:
Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:
Completely emptied packages can be recycled.
Handle contaminated packages in the same way as the substance itself.

13.2. Additional information
No data available
SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.
not relevant

14.2. UN proper shipping name
not relevant

14.3. Transport hazard class(es)
not relevant

14.4. Packing group
not relevant

14.5. Environmental hazards
not relevant

14.6. Special precautions for user
not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
No data available

15.2. Chemical Safety Assessment
Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information
No data available

SECTION 16: Other information

16.1. Indication of changes
No data available

16.2. Abbreviations and acronyms
See overview table at www.euphrac.eu

16.3. Key literature references and sources for data
No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
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<th>Classification procedure</th>
</tr>
</thead>
<tbody>
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<td>Skin corrosion/irritation (Skin Irrit. 2)</td>
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</table>

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

<table>
<thead>
<tr>
<th>Hazard statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
</tr>
<tr>
<td>H315</td>
</tr>
<tr>
<td>H319</td>
</tr>
</tbody>
</table>

16.6. Training advice
No data available
16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.

TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.