

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 as amended by Commission Regulation (EU) 2020/878  
and Regulation (EC) No. 1272/2008

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Revision Number 4

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

### 1.1. Product identifier

**Product Name** LITHIUM BCX 85 CELLS AND BATTERIES

**Synonyms** Hermetically-Sealed Lithium Bromine Chloride in Thionyl Chloride Cells and Batteries

**Synonyms** None

**Pure substance/mixture** Mixture

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

**Recommended use** Battery

**Uses advised against** Do not short circuit or expose to temperatures higher than the maximum temperature rating specified by the manufacturer. Do not recharge, over charge or crush any cell or pack. Ensure cells and batteries are safely handled and stored. Review Section 7 completely before use

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

#### Manufacturer and Supplier

Electrochem Solutions  
670 Paramount Drive  
Raynham, MA 02767  
T: 781-830-5800

#### For further information, please contact

**E-mail address** customersupport@electrochemsolutions.com

### 1.4. Emergency telephone number

**Emergency telephone** CHEMTREC: +1-703-527-3887 (INTERNATIONAL)  
1-800-424-9300 (NORTH AMERICA)

**Emergency telephone - §45 - (EC)1272/2008**

**Europe** 112

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

This product is not hazardous in supplied solid form. This product is an article which is a sealed battery and does not require an SDS unless ruptured. The hazards indicated are for a ruptured battery.

<b>Acute toxicity - Oral</b>	Category 4 - (H302)
<b>Acute toxicity - Inhalation (Dusts/Mists)</b>	Category 4 - (H332)

<b>Skin corrosion/irritation</b>	Category 1 Sub-category A - (H314)
<b>Serious eye damage/eye irritation</b>	Category 1 - (H318)
<b>Specific target organ toxicity — single exposure</b>	Category 3 - (H335)
Category 3 Respiratory irritation	

**2.2. Label elements**

Contains Thionyl chloride, Lithium

**Signal word**

Danger

**Hazard statements**

H302 - Harmful if swallowed.

H314 - Causes severe skin burns and eye damage.

H332 - Harmful if inhaled.

H335 - May cause respiratory irritation.

EUH014 - Reacts violently with water

EUH029 - Contact with water liberates toxic gas

**Precautionary Statements - EU (§28, 1272/2008)**

P260 - Do not breathe dusts or mists.

P280 - Wear protective gloves/protective clothing and eye/face protection.

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTER or doctor.

P321 - Specific treatment (see supplemental first aid instructions on this label).

**Unknown acute toxicity**

17.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

17.5 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

**Additional information**

This product requires child resistant fastenings if supplied to the general public. This product requires tactile warnings if supplied to the general public.

**2.3. Other hazards**

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

Not applicable

**3.2 Mixtures**

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Thionyl chloride 7719-09-7	16-37	No data available	(016-015-00-0) 231-748-8	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Skin Corr. 1A (H314) (EUH029) (EUH014)	STOT SE 3 :: C>=1%	-	-
Bromine Chloride 13863-41-7	2-5.5	No data available	237-601-4	[C]	-	-	-
Lithium 7439-93-2	3-5	No data available	(003-001-00-4) 231-102-5	Skin Corr. 1B (H314) Water-react. 1 (H260) (EUH014)	-	-	-

Classification according to Regulation (EC) No. 1272/2008 [CLP] - Notes

[C] - Components with occupational exposure limits and/or biological occupational exposure limits requiring monitoring

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

#### Acute Toxicity Estimate

**If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components**

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Thionyl chloride 7719-09-7	270	No data available	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (Regulation (EC) No. 1907/2006 (REACH), Article 59)

## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

#### **General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

#### **Inhalation**

IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician. Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention.

#### **Eye contact**

Call a doctor or poison control centre immediately. Rinse immediately with plenty of water,

also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

**Skin contact**

If skin irritation occurs: Get medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.

**Ingestion**

Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

**Self-protection of the first aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. See section 8 for more information. Do not breathe dusts or mists.

**4.2. Most important symptoms and effects, both acute and delayed****Symptoms**

Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

**Effects of Exposure**

See Section 11 for additional Toxicological Information.

**4.3. Indication of any immediate medical attention and special treatment needed****Note to doctors**

Product is a corrosive material. Use of gastric lavage or emesis is contra-indicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

Use of water spray when fighting a lithium fire may be inefficient. However, copious amounts of water may be used to cool a battery fire and extinguish any surrounding combustible fires.

**5.2. Special hazards arising from the substance or mixture****Specific hazards arising from the chemical**

The electrolyte will release toxic sulfur dioxide gas. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.

**5.3. Advice for firefighters****Special protective equipment and precautions for fire-fighters**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****Personal precautions**

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate

ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid generation of dust. Do not breathe dust. Do not breathe dusts or mists.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Use personal protection recommended in Section 8.

## **6.2. Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** During a release, ensure the Personal Protection listed in Section 8 is worn. Neutralize any electrolyte contaminated surfaces with baking soda, soda lime or sodium bicarbonate. Transfer damaged battery and any clean up materials to a sealed container with a neutralizing material as stated above. Ensure the container is properly labeled.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

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

**Reference to other sections** See section 8 for more information See section 13 for more information

# **SECTION 7: Handling and storage**

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

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Do not crush, pierce, short circuit (+) and (-) battery terminals with conductive (metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Do not mix new and used batteries. Keep batteries in non-conductive (plastic) trays. Cells or batteries that have been dropped or experience mechanical shock should be isolated and monitored for approximately 5 days to identify a possible internal short circuit and resulting fire. Do not breathe dusts or mists.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Do not breathe dusts or mists.

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

**Storage Conditions** Do not store in high humidity environments. Never stack heavy objects on top of battery boxes. Keep batteries in original packaging until use and do not expose them to unnecessary or excessive handling. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials.

Storage class (TRGS 510)

LGK 8A.

**7.3. Specific end use(s)**

Specific use(s)

The identified uses for this product are detailed in Section 1.2.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure Limits**

The following exposure limits are provided for information only; exposure is not expected under normal conditions of use or storage.

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Thionyl chloride 7719-09-7	-	-	STEL: 0.2 ppm STEL: 1 mg/m <sup>3</sup>	-	STEL: 1 ppm STEL: 4.9 mg/m <sup>3</sup>
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Thionyl chloride 7719-09-7	-	-	Ceiling: 1 ppm Ceiling: 5 mg/m <sup>3</sup>	-	Ceiling: 1 ppm Ceiling: 5 mg/m <sup>3</sup>
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Thionyl chloride 7719-09-7	-	-	-	TWA: 1 ppm TWA: 5 mg/m <sup>3</sup> STEL: 1 ppm STEL: 5 mg/m <sup>3</sup>	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Thionyl chloride 7719-09-7	STEL: 1.0 mg/m <sup>3</sup> STEL: 0.2 ppm	-	Ceiling: 0.2 ppm Ceiling: 0.97 mg/m <sup>3</sup>	-	-
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Thionyl chloride 7719-09-7	-	-	-	Ceiling: 1 ppm Ceiling: 5 mg/m <sup>3</sup>	STEL: 3.6 mg/m <sup>3</sup> TWA: 1.8 mg/m <sup>3</sup>
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Thionyl chloride 7719-09-7	Ceiling: 0.2 ppm	TWA: 3 ppm TWA: 15 mg/m <sup>3</sup> STEL: 5 ppm STEL: 25 mg/m <sup>3</sup>	-	-	STEL: 1 ppm STEL: 4.9 mg/m <sup>3</sup>
Chemical name	Sweden		Switzerland	United Kingdom	
Thionyl chloride 7719-09-7	-		TWA: 1 ppm TWA: 5 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 4.9 mg/m <sup>3</sup>	
Lithium 7439-93-2	Bindande KGV: 0.02 mg/m <sup>3</sup>		TWA: 0.2 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>	-	

**Biological occupational exposure limits**

Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Lithium 7439-93-2	-	-	-	50 µg/L - BAR (not fixed) urine	-

**Derived No Effect Level (DNEL) - Workers**

Chemical name	Oral	Dermal	Inhalation
Thionyl chloride 7719-09-7	-	-	1 mg/m <sup>3</sup> [5] [6] 1 mg/m <sup>3</sup> [5] [7]
Lithium 7439-93-2	-	12 mg/kg bw/day [4] [6]	4.2 mg/m <sup>3</sup> [4] [6]

**Notes**

[4]

Systemic health effects.

[5]	Local health effects.
[6]	Long term.
[7]	Short term.

**Derived No Effect Level (DNEL) - General Public**

Chemical name	Oral	Dermal	Inhalation
Lithium 7439-93-2	1.2 mg/kg bw/day [4] [6]	-	1.8 mg/m <sup>3</sup> [4] [6]

**Notes**

[4]	Systemic health effects.
[6]	Long term.

**8.2. Exposure controls**

<b>Engineering controls</b>	Showers Eyewash stations Ventilation systems.
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**Personal protective equipment**

<b>Eye/face protection</b>	None required for normal handling of the finished product. If necessary to handle damaged product where exposure to the electrolyte is a possibility, chemical splash goggles and a face shield are recommended. Tight sealing safety goggles. Face protection shield. Eye protection must conform to standard EN 166.
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<b>Hand protection</b>	None required for normal handling of the finished product. If necessary to handle damaged product where exposure to the electrolyte is a possibility, chemically resistant gloves are recommended. Wear suitable gloves. Impervious gloves. Gloves must conform to standard EN 374.
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<b>Skin and body protection</b>	None required for normal handling of the finished product. If necessary to handle damaged product where exposure to the electrolyte is a possibility, a chemically resistant apron is recommended. Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
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<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
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<b>General hygiene considerations</b>	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Do not breathe dusts or mists.
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<b>Environmental exposure controls</b>	No information available.
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**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	
<b>Physical state</b>	Solid

Colour	No information available
Odour	None
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	N/A	Not applicable unless there is exposure to an electrolyte: Thionyl Chloride: -104.5 °C
Initial boiling point and boiling range	N/A	Not applicable unless there is exposure to an electrolyte: Thionyl Chloride: 76.11 °C
Flammability	N/A	Not applicable unless there is exposure to an electrolyte
Flammability Limit in Air		Not applicable unless there is exposure to an electrolyte
Upper flammability or explosive limits	N/A	No data available
Lower flammability or explosive limits	N/A	No data available
Flash point	N/A	Not applicable unless there is exposure to an electrolyte
Autoignition temperature	N/A	Not applicable unless there is exposure to an electrolyte
Decomposition temperature	N/A	Not applicable unless there is exposure to an electrolyte
pH	N/A	Not applicable unless there is exposure to an electrolyte
pH (as aqueous solution)		No data available
Kinematic viscosity	N/A	Not applicable unless there is exposure to an electrolyte
Dynamic viscosity	N/A	Not applicable unless there is exposure to an electrolyte: Thionyl Chloride: ca. 0.6 mPas @ 25°C
Water solubility		Not applicable unless there is exposure to an electrolyte: Thionyl Chloride: Decomposes violently on contact with water
Solubility(ies)	N/A	Not applicable unless there is exposure to an electrolyte
Partition coefficient	N/A	Not applicable unless there is exposure to an electrolyte
Vapour pressure	N/A	Not applicable unless there is exposure to an electrolyte: Thionyl Chloride: 97 mm Hg @ 20 °C
Relative density	N/A	Not applicable unless there is exposure to an electrolyte: Thionyl Chloride: 1.635
Bulk density		No data available
Liquid Density		No data available
Relative vapour density	N/A	Not applicable unless there is exposure to an electrolyte
Particle characteristics		
Particle Size		No data available
Particle Size Distribution		No data available

## 9.2. Other information

### 9.2.1. Information with regards to physical hazard classes

Explosive properties	Not applicable unless there is exposure to an electrolyte
Oxidising properties	Not applicable unless there is exposure to an electrolyte

### 9.2.2. Other safety characteristics

Evaporation rate	N/A Not applicable unless there is exposure to an electrolyte
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**SECTION 10: Stability and reactivity****10.1. Reactivity**

**Reactivity** None under normal use conditions.

**10.2. Chemical stability**

**Stability** Stable under normal conditions.

**Explosion data**

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

**10.3. Possibility of hazardous reactions**

**Possibility of hazardous reactions** None under normal use conditions. In the event of a leak or rupture: electrolyte and lithium will react with water.

**10.4. Conditions to avoid**

**Conditions to avoid** Exposure to air or moisture over prolonged periods. Excessive heat.

**10.5. Incompatible materials**

**Incompatible materials** Under normal use, batteries are not incompatible. The electrolyte is incompatible with: Acids. Bases. Oxidising agent.

**10.6. Hazardous decomposition products**

**Hazardous decomposition products** Lithium oxides. Sulfur dioxide. Hydrogen chloride. Bromine. Chlorine.

**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Information on likely routes of exposure**

<b>Product Information</b>	Exposure is not expected for product under normal conditions of use. In the event of an exposure to electrolyte the following toxicological information is provided:.
<b>Inhalation</b>	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract. Harmful by inhalation.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes severe burns.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May

cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

### **Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** Redness. Burning. May cause blindness. Coughing and/ or wheezing.

**Acute toxicity** Harmful if swallowed. Harmful by inhalation.

### **Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document:

**ATEmix (oral)** 1,114.90 mg/kg

**ATEmix (inhalation-dust/mist)** 3.34 mg/l

### **Unknown acute toxicity**

17.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

17.5 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

### **Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Thionyl chloride	= 270 mg/kg ( Rat )	-	= 2.717 mg/L ( Rat ) 4 h

### **Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes severe skin burns and eye damage.
<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Causes serious eye damage. Causes burns.
<b>Respiratory or skin sensitisation</b>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met.
<b>STOT - single exposure</b>	May cause respiratory irritation.
<b>STOT - repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Target organ effects</b>	Eyes. Skin. Respiratory system. Gastrointestinal tract (GI). Kidney. Liver.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met.

### **11.2. Information on other hazards**

#### **11.2.1. Endocrine disrupting properties**

**Endocrine disrupting properties** This product does not contain any known or suspected endocrine disruptors.

**11.2.2. Other information**

**Other adverse effects** No information available.

**SECTION 12: Ecological information****12.1. Toxicity**

**Ecotoxicity** Avoid any release to waterways, groundwater, or any environmental media. Harmful effects due to pH shift are expected.

**12.2. Persistence and degradability**

**Persistence and degradability** No information available.

**12.3. Bioaccumulative potential**

**Bioaccumulation** For Thionyl Chloride: Does not bioaccumulate.

**12.4. Mobility in soil**

**Mobility in soil** No information available.

**12.5. Results of PBT and vPvB assessment**

**PBT and vPvB assessment** The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Thionyl chloride 7719-09-7	PBT assessment does not apply
Lithium 7439-93-2	PBT assessment does not apply

**12.6. Endocrine disrupting properties**

**Endocrine disrupting properties** This product does not contain any known or suspected endocrine disruptors.

**12.7. Other adverse effects**

**Other adverse effects** No information available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**Waste codes / waste designations according to EWC / AVV** According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application

for which the product was used.

## SECTION 14: Transport information

### Note:

Intended for All lithium batteries:

Lithium cells and batteries must successfully pass the tests defined in "UN Manual of Tests and Criteria", Section 38.3 and may require they be manufactured under a Quality Management Program. Lithium Metal and Lithium Ion cells and batteries, when shipped by themselves (not in or with equipment) are forbidden as cargo on passenger aircraft and must be marked as "Cargo Air Only" if shipped by air (they must be marked "Cargo Air Only" for all modes of DOT transport). Lithium Ion cells and batteries, when shipped by themselves (not in or with equipment) by air must be shipped at or below 30% full charge.

Note: Some regulations require a summary of test results and/or a copy of the Quality Management Programs be made available for Lithium cells and batteries. For specific transport information for all variations of BCX cells, please review the Product Data Sheet. This can be sent upon request. Please contact the manufacturer.

If packed in or with equipment use UN3091.

### IMDG

14.1 UN number or ID number	UN3090
14.2 UN proper shipping name	LITHIUM METAL BATTERIES
14.3 Transport hazard class(es)	9
14.4 Packing group	Not applicable
Description	UN3090, LITHIUM METAL BATTERIES, 9
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	188, 230, 310, 376, 377, 384, 387
EmS-No.	F-A, S-I
14.7 Maritime transport in bulk according to IMO instruments	No information available

### RID

14.1 UN number	UN3090
14.2 UN proper shipping name	LITHIUM METAL BATTERIES
14.3 Transport hazard class(es)	9
14.4 Packing group	Not applicable
Description	UN3090, LITHIUM METAL BATTERIES, 9
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	188, 230, 310, 376, 377, 387, 636
Classification code	M4

### ADR

14.1 UN number or ID number	UN3090
14.2 UN proper shipping name	LITHIUM METAL BATTERIES
14.3 Transport hazard class(es)	9
14.4 Packing group	Not applicable
Description	UN3090, LITHIUM METAL BATTERIES, 9
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	188, 230, 310, 376, 377, 387, 636,
Classification code	M4
Tunnel restriction code	(E)

### IATA

14.1 UN number or ID number	UN3090
14.2 UN proper shipping name	Lithium metal batteries
14.3 Transport hazard class(es)	9

<b>14.4 Packing group</b>	Not applicable
<b>Description</b>	UN3090, Lithium metal batteries, 9
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special Precautions for Users</b>	
<b>Special Provisions</b>	A88, A99, A154, A164, A183, A201, A213, A334, A802
<b>ERG Code</b>	12FZ
<b>Note:</b>	None

## SECTION 15: Regulatory information

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

#### National regulations

##### Germany

**Water hazard class (WGK)** slightly hazardous to water (WGK 1)

##### European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

#### Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Thionyl chloride - 7719-09-7	75.	-
Lithium - 7439-93-2	75.	-

#### Persistent Organic Pollutants

Not applicable

#### Dangerous substance category per Seveso Directive (2012/18/EU)

O1 - Substances or mixtures with hazard statement EUH014

O3 - Substances or mixtures with hazard statement EUH029

#### Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

#### Biocidal Products Regulation (EU) No 528/2012 (BPR)

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)
Bromine Chloride - 13863-41-7	Product-type 11: Preservatives for liquid-cooling and processing systems

#### International Inventories

Contact supplier for inventory compliance status

### 15.2. Chemical safety assessment

## Chemical Safety Report

No information available

**SECTION 16: Other information****Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

EUH014 - Reacts violently with water

EUH029 - Contact with water liberates toxic gas

H260 - In contact with water releases flammable gases which may ignite spontaneously

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H332 - Harmful if inhaled

**Legend**

ATE: Acute Toxicity Estimate

SVHC: Substances of Very High Concern for Authorisation:

PBT: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals

vPvB: Very Persistent and very Bioaccumulative (vPvB) Chemicals

**Legend Section 8: Exposure controls/personal protection**

TWA TWA (time-weighted average)

STEL

STEL (Short Term Exposure Limit)

Ceiling Maximum limit value

\*

Skin designation

SCBA Self-contained breathing apparatus

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	On basis of test data
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)

European Chemicals Agency (ECHA) (ECHA\_API)

EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

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**This safety data sheet complies with the requirements of Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No. 1907/2006**

**Disclaimer**

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**End of Safety Data Sheet**