

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/09/2024

Reviewed on 07/08/2024

## 1 Identification

- **Product identifier**
- **Trade name:** Lithium tetrachlorocuprate solution
- **Article number:** 212710
- **CAS Number:** 15489-27-7
- **Application of the substance / the mixture** Laboratory chemicals for research and development
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
 BeanTown Chemical  
 9 Sagamore Park Road  
 Hudson, NH 03051  
 USA
- **Phone:** (603) 402-2234  
**Fax:** (603) 402-9713  
**Email:** [technical@beantownchem.com](mailto:technical@beantownchem.com)  
[www.beantownchem.com](http://www.beantownchem.com)
- **Information department:** Technical Support Department
- **Emergency telephone number:**  
 During normal operating hours, please call (603) 402-2234  
 After hours, please call Chemtrec at (800) 424-9300

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** *Danger*

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- **Hazard-determining components of labeling:**

*tetrahydrofuran*

- **Hazard statements**

*Highly flammable liquid and vapor.*

*Causes skin irritation.*

*Causes serious eye irritation.*

*Suspected of causing cancer.*

*May cause respiratory irritation.*

- **Precautionary statements**

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** *Not applicable.*

- **vPvB:** *Not applicable.*

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** *Mixture of the substances listed below with nonhazardous additions.*

- **Dangerous components:**

109-99-9	tetrahydrofuran	97.5%
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### 4 First-aid measures

- **Description of first aid measures**

- **General information:** *Immediately remove any clothing soiled by the product.*

- **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*

- **After skin contact:** *Immediately rinse with water.*

- **After eye contact:**

*Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*

- **After swallowing:** *If symptoms persist consult doctor.*

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*

- **Indication of any immediate medical attention and special treatment needed**

*No further relevant information available.*

### 5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:** *CO<sub>2</sub>, sand, extinguishing powder. Do not use water.*

- **For safety reasons unsuitable extinguishing agents:** *Water with full jet*

- **Special hazards arising from the substance or mixture** *No further relevant information available.*

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- **Advice for firefighters**
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **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 disposal information.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

109-99-9	tetrahydrofuran	100 ppm
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· **PAC-2:**

109-99-9	tetrahydrofuran	500 ppm
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· **PAC-3:**

109-99-9	tetrahydrofuran	5000* ppm
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## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:**  
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute

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· **Control parameters**

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

**109-99-9 tetrahydrofuran**

PEL	Long-term value: 590 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 735 mg/m <sup>3</sup> , 250 ppm Long-term value: 590 mg/m <sup>3</sup> , 200 ppm
TLV	Short-term value: 295 mg/m <sup>3</sup> , 100 ppm Long-term value: 147 mg/m <sup>3</sup> , 50 ppm Skin

· **Ingredients with biological limit values:**

**109-99-9 tetrahydrofuran**

BEI	2 mg/L Medium: urine Time: end of shift Parameter: Tetrahydrofuran
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· **Additional information:** *The lists that were valid during the creation were used as basis.*

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.*
- Immediately remove all soiled and contaminated clothing.*
- Wash hands before breaks and at the end of work.*
- Store protective clothing separately.*
- Avoid contact with the eyes.*
- Avoid contact with the eyes and skin.*

· **Breathing equipment:**

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.*

· **Protection of hands:**

- Protective gloves*
- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*
- Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*
- Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

· **Material of gloves**

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.*

· **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 goggles*

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** *Liquid*

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· <b>Color:</b>	According to product specification
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.
· <b>pH-value:</b>	Not determined.
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	-108 °C (-162.4 °F)
<b>Boiling point/Boiling range:</b>	Undetermined
· <b>Flash point:</b>	-14 °C (6.8 °F)
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	230 °C (446 °F)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	1.5 Vol %
<b>Upper:</b>	12 Vol %
· <b>Vapor pressure at 20 °C (68 °F):</b>	200 hPa (150 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	0.91 g/cm <sup>3</sup> (7.59395 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	97.5 %
<b>VOC content:</b>	97.50 %
	887.3 g/l / 7.40 lb/gal
· <b>Solids content:</b>	2.5 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.

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· **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

109-99-9 tetrahydrofuran

Oral	LD50	2,500 mg/kg (rat)
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· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

109-99-9	tetrahydrofuran	2B
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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*

## 14 Transport information

<b>· UN-Number</b>	UN2056
<b>· DOT, IMDG, IATA</b>	
<b>· UN proper shipping name</b>	<i>Tetrahydrofuran mixture</i>
<b>· DOT</b>	<i>TETRAHYDROFURAN mixture</i>
<b>· IMDG, IATA</b>	
<b>· Transport hazard class(es)</b>	
<b>· DOT, IMDG, IATA</b>	
<b>· Class</b>	<i>3 Flammable liquids</i>
<b>· Label</b>	<i>3</i>
<b>· Packing group</b>	
<b>· DOT, IMDG, IATA</b>	<i>II</i>
<b>· Environmental hazards:</b>	
<b>· Marine pollutant:</b>	<i>No</i>
<b>· Special precautions for user</b>	<i>Warning: Flammable liquids</i>
<b>· Hazard identification number (Kemler code):</b>	<i>33</i>
<b>· EMS Number:</b>	<i>F-E,S-D</i>
<b>· Stowage Category</b>	<i>B</i>
<b>· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	<i>Not applicable.</i>
<b>· Transport/Additional information:</b>	
<b>· DOT</b>	
<b>· Quantity limitations</b>	<i>On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L</i>
<b>· IMDG</b>	
<b>· Limited quantities (LQ)</b>	<i>1L</i>
<b>· Excepted quantities (EQ)</b>	<i>Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</i>
<b>· UN "Model Regulation":</b>	<i>UN 2056 TETRAHYDROFURAN MIXTURE, 3, II</i>

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
*No further relevant information available.*
- **Sara**

**· Section 355 (extremely hazardous substances):**

*None of the ingredients is listed.*

**· Section 313 (Specific toxic chemical listings):**

*None of the ingredients is listed.*

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· **TSCA (Toxic Substances Control Act):**

109-99-9	tetrahydrofuran	ACTIVE
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· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

109-99-9	tetrahydrofuran	SC
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· **TLV (Threshold Limit Value)**

109-99-9	tetrahydrofuran	A3
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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **RTECS**

None of the ingredients is listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **NFPA ratings (scale 0-4)**

Health = 2

Fire = 3

Reactivity = 0

· **HMIS ratings (scale 0-4)**

Health = 2

Fire = 3

Reactivity = 0

· **Department issuing SDS:** Technical Support Department

· **Contact:** Technical Support Department

· **Date of preparation / last revision** 07/09/2024 / -

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

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*VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**BEI: Biological Exposure Limit**Flam. Liq. 2: Flammable liquids – Category 2**Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A**Carc. 2: Carcinogenicity – Category 2**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

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