

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations


Printing date: July 16, 2018

Revision: July 16, 2018

1 Identification

- **Product identifier**
- **Trade name:** Lithium Tetrachlorogalate in Sulfuryl Chloride Solution
- **Product code:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Product Component
- **Restrictions on use:** Contact manufacturer/supplier
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Engineered Power
20, 3103 - 14th Avenue N.E. Calgary, Alberta, Canada T2A 7N6
Telephone
(403) 235-2584
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Acute Tox. 2 H330 Fatal if inhaled.
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.
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:**

GHS05 GHS06 GHS07
- **Signal word:** Danger
- **Hazard statements:**
H330 Fatal if inhaled.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
- **Precautionary statements:**
P260 Do not breathe mist/vapors/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 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/doctor.
 P320 Specific treatment is urgent (see on this label).
 P363 Wash contaminated clothing before reuse.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

7791-25-5	sulphuryl chloride Acute Tox. 2, H330 Skin Corr. 1B, H314 STOT SE 3, H335	>80%
13450-90-3	gallium trichloride Met. Corr. 1, H290; Skin Corr. 1B, H314; Eye Dam. 1, H318	10%
7447-41-8	lithium chloride Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	2.5-5%

· **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
 For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take affected persons out into the fresh air.

· **After inhalation:**

Supply fresh air.

Seek immediate medical advice.

Provide oxygen treatment if affected person has difficulty breathing.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**

Immediately rinse with water.

Seek immediate medical advice.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

· **After eye contact:**

Remove contact lenses if worn, if possible.

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Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

- **Most important symptoms and effects, both acute and delayed:**

Coughing

Strong caustic effect on skin and mucous membranes.

May cause respiratory irritation.

Breathing difficulty

Caustic effect on skin and mucous membranes.

Eye damage.

- **Danger:**

Danger of gastric perforation.

Danger of pulmonary edema.

Danger of impaired breathing.

Causes serious eye damage.

Fatal if inhaled.

Causes burns.

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

Decontaminate patient thoroughly with sodium bicarbonate solution; assume that some skin contact has taken place. Treat other symptoms symptomatically, with emphasis on maintaining electrolyte balance.

Medical supervision for at least 48 hours.

If necessary oxygen respiration treatment.

5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:**

The product is not flammable.

CO₂, sand, extinguishing powder. Do not use water.

- **For safety reasons unsuitable extinguishing agents:** Water

- **Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

Wear fully protective suit.

- **Additional information:** Evacuate area and fight fire from from the upwind side.

6 Accidental release measures

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

Use respiratory protective device against the effects of fumes/dust/aerosol.

Isolate area and prevent access.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Keep people at a distance and stay upwind.

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- **Environmental precautions** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**
If a spill is small, a trained person may attempt to stop or contain the leak by carefully neutralizing spill with calcium carbonate or sodium bicarbonate. Seal leaking container and neutralized product in a plastic bag and transfer to a lidded container for disposal or recovery. Consult an accredited waste disposal contractor or the local authority for additional advice. Large spills should only be handled by specially trained hazardous materials personnel.
Do not flush with water or aqueous cleansing agents
Send for recovery or disposal in suitable receptacles.
- **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.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
Prevent formation of aerosols.
Use only in well ventilated areas.
Contact lenses should not be worn.
- **Information about protection against explosions and fires:**
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**
Store only in approved receptacles.
Provide ventilation for receptacles.
Protect from humidity and water.
Unsuitable material for receptacle: aluminium.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Do not store together with oxidizing and acidic materials.
Do not store together with alkalis (caustic solutions).
Store away from water.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Keep containers tightly sealed.
Protect from humidity and water.
This product is hygroscopic.
- **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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- **Exposure controls**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Use adequate ventilation, to include fume hood. Safety shower / eye wash should be provided. Provide sodium bicarbonate solution for skin contact.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

- **Engineering controls:** No relevant information available.

- **Breathing equipment:**



Respiratory protection required.

- **Protection of hands:**



Protective gloves

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

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:**

Contact lenses should not be worn.



Safety glasses

Face protection

- **Body protection:**

Full head, face and neck protection

Protective work clothing

- **Limitation and supervision of exposure into the environment**

No relevant information available.

- **Risk management measures**

See Section 7 for additional information.

No relevant information available.

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9 Physical and chemical properties

· Information on basic physical and chemical properties

· Appearance:

· Form:	Liquid
· Color:	Clear to straw color.
· Odor:	Pungent, makes eyes water
· Odor threshold:	Not determined.

· pH-value:	Not determined.
· Melting point/Melting range:	-107 °C (-160.6 °F) (±9°F/5°C)
· Boiling point/Boiling range:	80 °C (176 °F) (±18°F/10°C)

· Flash point:	> 93 °C (>199.4 °F)
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· Flammability (solid, gaseous):	Not applicable.
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· Auto-ignition temperature:	Not determined.
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· Decomposition temperature:	140 °C (284 °F) (± 9°F/5°C)
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· Danger of explosion:	Product does not present an explosion hazard.
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· Explosion limits

· Lower:	Not determined.
· Upper:	Not determined.

· Vapor pressure at 21 °C (69.8 °F):	133 hPa (99.8 mm Hg)
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· Density at 20 °C (68 °F):	1.65 g/cm ³ (13.77 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not determined.
· Evaporation rate:	Not determined.

· Solubility in / Miscibility with Water:

Reacts violently with water.
Contact with water liberates toxic gas.

· Partition coefficient (n-octanol/water):	Not determined.
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· Viscosity

· Dynamic:	Not determined.
· Kinematic:	Not determined.

· Other information	No relevant information available.
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10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** Heating may cause release of toxic fumes.
- **Possibility of hazardous reactions**
 - Contact with water releases toxic gases.
 - Reacts violently with water.
 - Corrosive action on metals.

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Develops corrosive gases / fumes.

Toxic fumes may be released if heated above the decomposition point.

May produce violent reactions with bases and numerous organic substances including alcohols and amines.

· **Conditions to avoid**

Moisture.

Excessive heat and contact with oxidizers.

Avoid acids.

· **Incompatible materials**

Strong acids, oxidizers, water.

Strong oxidizing agents, bases, amines and aldehydes.

· **Hazardous decomposition products**

Carbon monoxide and carbon dioxide

Sulfur oxides (SO_x)

Chlorine compounds

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

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

ATE (Acute Toxicity Estimate)

Oral	LD50	10,520 mg/kg (rat)
Inhalative	LC50/4h	0.59 mg/l

7447-41-8 lithium chloride

Oral	LD50	526 mg/kg (rat)
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· **Primary irritant effect:**

· **On the skin:** Strong caustic effect on skin and mucous membranes.

· **On the eye:** Strong caustic effect.

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

· **Subacute to chronic toxicity:** Causes damage to organs through prolonged or repeated exposure.

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

None of the ingredients are listed.

· **NTP (National Toxicology Program):**

None of the ingredients are listed.

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

None of the ingredients are listed.

· **Probable route(s) of exposure:**

Inhalation.

Ingestion.

Eye contact.

Skin contact.

· **Acute effects (acute toxicity, irritation and corrosivity):**

Harmful if swallowed.

Fatal if inhaled.

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Irritating to respiratory system.
Causes severe skin burns and eye damage.

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12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No 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.
Contact manufacturer for recycling information.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|-------------------------------------|------------------------------|
| · UN-Number | |
| · DOT, IMDG, IATA | UN1834 |
| · UN proper shipping name | |
| · DOT | Sulfuryl chloride, solution |
| · IMDG | SULPHURYL CHLORIDE, SOLUTION |
| · IATA | Sulphuryl chloride, solution |
| · Transport hazard class(es) | |

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· DOT

· **Class** 6.1
 · **Label** 6.1, 8

· IMDG

· **Class** 8
 · **Label** 6.1/8

· IATA

· **Class** 8
 · **Label** 6.1 (8)

· **Packing group**
 · **DOT, IMDG, IATA** I

· **Environmental hazards**
 · **Marine pollutant:** No

· **Special precautions for user** Not applicable.
 · **EMS Number:** F-A, S-B
 · **Segregation groups** Acids

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· Transport/Additional information:

· **DOT**
 · **Quantity limitations** On passenger aircraft/rail: Forbidden
 On cargo aircraft only: Forbidden

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**
- **Section 302 (extremely hazardous substances):**

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None of the ingredients are listed.

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

13450-90-3 | gallium trichloride

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

None of the ingredients are listed.

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

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

None of the ingredients are listed.

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

None of the ingredients are listed.

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

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

None of the ingredients are listed.

· **Canadian Domestic Substances List (DSL) (Substances not listed.):**

All ingredients are listed.

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.

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bio-accumulable, Toxic
 vPvB: very Persistent and very Bioaccumulative
 OSHA: Occupational Safety & Health Administration
 Met. Corr. 1: Corrosive to metals – Category 1
 Acute Tox. 4: Acute toxicity – Category 4
 Acute Tox. 2: Acute toxicity – Category 2
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· **Sources**

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