

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Lithium Chloride Solution
CHEMICAL FAMILY: Alkali Chloride
MOLECULAR FORMULA: LiCl
SYNONYM(s): Lithium Chloride, Aqueous Solution
ALTERNATE TRADE NAME(S): ADVAGuard[®] Inhibited Lithium Chloride Solution, Limit[®] 2000, Limit[®] 301
GENERAL USE: Industrial Manufacturing

MANUFACTURER
FMC CORPORATION
Lithium Division
P.O. Box 795
Bessemer City, NC 28016-0795
General Information: (704) 868-5300

Emergency Telephone Numbers:
CHEMTREC (800) 424-9300
Emergency Phone (704) 629-5361 (Plant) Call Collect 24 Hr/Day
Emergency Phone (303) 595-9048 (Medical) Call Collect

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt. %</u>
Lithium chloride	7447-41-8	33 - 42
Water	7732-18-5	58 - 62

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: Water-white liquid
POTENTIAL HEALTH EFFECTS: This product is moderately irritating to the skin, eyes, nose and throat. Ingestion may cause drowsiness, weakness, tremors, anorexia, nausea, blurred vision, and muscle spasm.

COMMENTS:
(See Section 11, Toxicological Information)

4. FIRST AID MEASURES

EYES: Flush with water for at least 15 minutes. If irritation occurs and persists, contact a medical doctor.

SKIN: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

INGESTION: Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with a finger or by giving syrup of ipecac. Never induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

NOTES TO MEDICAL DOCTOR:

This product has low oral, dermal and inhalation toxicity, and is a mild irritant. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

<u>FLAMMABLE LIMITS:</u>	Upper: Not available Lower: Not available.
<u>GENERAL HAZARD:</u>	No known physical hazard, non-combustible.
<u>EXTINGUISHING MEDIA:</u>	Dry chemical, CO ₂ , water spray or regular foam.
<u>HAZARDOUS COMBUSTION PRODUCTS:</u>	None
<u>FIRE FIGHTING PROCEDURES:</u>	Wear full protective clothing and self-contained breathing apparatus (SCBA) approved for fire fighting. This is necessary to protect against the hazards of heat, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated.
<u>AUTOIGNITION TEMPERATURE:</u>	Not applicable
<u>PROPERTIES CONTRIBUTING TO FLAMMABILITY:</u>	None
<u>FLASH POINT:</u>	Not applicable
<u>SENSITIVITY TO STATIC DISCHARGE:</u>	Not applicable
<u>SENSITIVITY TO IMPACT:</u>	Not applicable

COMMENTS:
(See Section 10, Stability and Reactivity)

6. ACCIDENTAL RELEASE MEASURES

<u>RELEASE NOTES:</u>	Contain spill with absorbent. Transfer or pump into a suitable container. Dispose of waste according to local and Federal laws and regulations. Before cleanup measures begin, review the entire MSDS with particular attention to Section 3, Emergency Overview and Potential Health Effects; and Section 8, Recommended Personal Protective Equipment.
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7. HANDLING AND STORAGE

<u>HANDLING:</u>	Avoid contact with eyes, skin or clothing. Avoid breathing mist. Use with adequate ventilation. Wear safety glasses or goggles and rubber gloves. Wash thoroughly after handling.
<u>STORAGE:</u>	Keep away from strong acids. Keep container closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

<u>Chemical Name</u>	<u>TWA (ACGIH)</u>	<u>STEL/Ceiling (ACGIH)</u>	<u>PEL (OSHA)</u>	<u>STEL/Ceiling (OSHA)</u>
PNO ¹ , inhalable particulate	10 mg/m ³			
PNO ¹ , respirable particulate	3 mg/m ³			

¹PNO = Particulates Not Otherwise Classified.

ENGINEERING CONTROLS:
Use local exhaust ventilation to keep airborne concentrations below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

<u>Eyes And Face:</u>	Safety glasses or goggles
<u>Respiratory:</u>	If product is misting or when engineering controls are not adequate, wear a NIOSH/MSHA respirator approved for inorganic dusts and

Protective Clothing: mists.
Rubber gloves
Work Hygienic Practices: Quick-drench eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Odorless
APPEARANCE: Water-white liquid
pH: 6 to 8
PERCENT VOLATILE: Not applicable
VAPOR PRESSURE: Not applicable
VAPOR DENSITY: Not applicable
BOILING POINT: 130°C (266°F)
MELTING POINT: Not applicable
SOLUBILITY IN WATER: Miscible in any proportion
EVAPORATION RATE(Butyl Acetate = 1): Not applicable
SPECIFIC GRAVITY: 1.2-1.3 g/cc @ 25°C (77°F)
MOLECULAR WEIGHT: 42.4 (LiCl)
COEFF. OIL/WATER: Not applicable
ODOR THRESHOLD: Not applicable
FLAMMABLE LIMITS: Upper: Not available Lower: Not available.
FLASH POINT: Not applicable
AUTOIGNITION TEMPERATURE: Not applicable
EXPLOSIVE PROPERTIES: Not explosive
OXIDIZING PROPERTIES: Not an oxidizer

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: None
STABILITY: Stable
POLYMERIZATION: Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS: None
INCOMPATIBLE MATERIALS: None

11. TOXICOLOGICAL INFORMATION

Eye Contact: No data available for the product.
LiCl: Moderately irritating (rabbit) [FMC I87-0996]
Skin Contact: No data available for the product.
LiCl: PII = 1.5/8.0 Slightly irritating (rabbit) [FMC I87-0997]
Skin Absorption: No data available for the product.
LiCl: Dermal LD₅₀ > 2000 mg/kg (rabbit) [FMC I94-1941]
Ingestion: No data available for the product.
LiCl: Oral LD₅₀ = 526 mg/kg (rat) [RTECS 2005]
Inhalation: Inhalation LC₅₀ > 5.53 mg/L (rat) (35-40% LiCl aqueous solution) [FMC Study I97-2224]

Acute Effects From Overexposure:

This product is moderately irritating to the skin, eyes, nose and throat.

Chronic Effects From Overexposure:

Ingestion of lithium chloride has been reported to produce drowsiness, weakness, tremors, anorexia, nausea, blurred vision and muscle spasms in humans. Exposure to lithium chloride has been shown to impair reproductive function and to produce developmental toxicity in laboratory animals (Reproductive Toxicology 9 (2), 175-210, 1995).

<u>Sensitization:</u>	Non-sensitizing (guinea pig) (35-40% LiCl aqueous solution) [FMC Study I97-2225]
<u>Carcinogenicity:</u>	EH40: Not listed. IARC: Not listed. NTP: Not listed. OSHA: Not considered a carcinogen under OSHA. ACGIH: Not listed
<u>Mutagenicity:</u>	No
<u>Reproductive Toxicity:</u>	No

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Lithium Chloride:
96 hour LC₅₀ = 158 mg/L (Rainbow trout) [FMC I97-2174]
48 hour EC₅₀ = 249 mg/L (Daphnia magna) [FMC I97-2175]

Chemical Fate Information:

Lithium chloride exists as the inorganic ions of lithium and chloride in aqueous solutions. LiCl is not biodegraded, bioaccumulated or photodegraded.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of waste according to local and Federal laws and regulations.

14. TRANSPORT INFORMATION

<u>PROPER SHIPPING NAME:</u>	None
<u>CLASSIFICATION:</u>	None
<u>LABELS:</u>	None
<u>UN NUMBER:</u>	None
<u>PACKING GROUP:</u>	None
<u>CUSTOM TARIFF NO:</u>	2827.39.9050
<u>MARINE POLLUTANT:</u>	No
<u>PIH:</u>	Not designated Poison Inhalation Hazard by US DOT.

15. REGULATORY INFORMATION

UNITED STATES

SECTION 311 HAZARD CATEGORY (40 CFR 370): Immediate (acute) health hazard.
SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372): This product does not contain a toxic chemical subject to the reporting requirements of Section 313 of Emergency Planning and Community Right-To-Know Act of 1986.

SECTION 302 EXTREMELY HAZARDOUS Not listed

SUBSTANCES (40 CFR 355):
CERCLA HAZARDOUS SUBSTANCE (40 CFR
302.4):

Not listed
This product is not subject to TSCA 12 (b) Export
Notification Requirements.
Listed

TSCA SEC 12B EXPORT NOTIFICATION:

TSCA INVENTORY STATUS (40 CFR 710):

CANADA
WHMIS:

Product Identification No.: None
Hazard Classification:
Ingredient Disclosure List: Not listed

16. OTHER INFORMATION

REVISION SUMMARY: Revision # 11: Section 2 revised.

NFPA RATING

HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0
SPECIAL: None

This MSDS has been prepared to meet U. S. OSHA Hazard Communication Standard, 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

type 1a

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