

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Lithium Carbonate
CHEMICAL FAMILY: Alkali Carbonates
MOLECULAR FORMULA: Li₂CO₃
ALTERNATE TRADE NAME(S): Lithchips®
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. HAZARDS IDENTIFICATION

CLASSIFICATION: Skin irritation; Category 3
Acute Toxicity; Category 4
Aquatic Toxicity; Category 3

LABELING:

SYMBOLS: Exclamation mark
SIGNAL WORD: Warning
HAZARD STATEMENTS: Causes mild skin irritation.
Harmful if swallowed.
Harmful to aquatic life

PRECAUTIONARY STATEMENTS: **Prevention:**
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product
Avoid release to the environment
Response
First Aid
See Section 4 of the MSDS.
Storage
See Section 7 of the MSDS.
Disposal
See Section 13 of the MSDS.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>EC No.</u>	<u>Wt.%</u>	<u>Classification, Hazard Statement Codes</u>	
Lithium carbonate	554-13-2	209-062-5	100	Skin Irrit. Cat 3	H316
				Acute Tox. Cat 4	H302
				Aquatic Tox. Cat 3	H402

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. Never give anything by mouth to an unconscious person. If any discomfort persists, obtain medical attention.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

NOTES TO MEDICAL DOCTOR:

Lithium carbonate has low toxicity and may produce moderate irritation. Treatment is symptomatic and supportive.

5. FIRE FIGHTING MEASURES

FLAMMABLE LIMITS: Upper: Not available Lower: Not available.

GENERAL HAZARD: No known physical hazard, non-combustible.

EXTINGUISHING MEDIA: Dry chemical, CO₂, water spray or regular foam.

HAZARDOUS COMBUSTION PRODUCTS: None

FIRE FIGHTING PROCEDURES: 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.

AUTOIGNITION TEMPERATURE: Not applicable

PROPERTIES CONTRIBUTING TO FLAMMABILITY: None

FLASH POINT: Not applicable

SENSITIVITY TO STATIC DISCHARGE: Not applicable

SENSITIVITY TO IMPACT: Not applicable

COMMENTS:

(See Section 10, Stability and Reactivity)

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Sweep up and place in 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.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with eyes, skin or clothing. Use with adequate ventilation. Wear safety glasses or goggles and rubber gloves. Wash thoroughly after handling.

STORAGE: 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>
PNOC ¹ , inhalable particulate	10 mg/m ³			
PNOC ¹ , respirable particulate	3 mg/m ³			

¹PNOC = 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>	When engineering controls are not adequate, wear a NIOSH/MSHA respirator approved for protection against inorganic dusts.
<u>Protective Clothing:</u>	Rubber gloves
<u>Work Hygienic Practices:</u>	Quick-drench eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

<u>ODOR:</u>	Odorless
<u>APPEARANCE:</u>	Solid, white granular or powder
<u>pH:</u>	(1% Slurry) @ 25°C: 11.2
<u>PERCENT VOLATILE:</u>	Not applicable
<u>VAPOR PRESSURE:</u>	Not applicable
<u>VAPOR DENSITY:</u>	Not applicable
<u>BOILING POINT:</u>	Not applicable
<u>MELTING POINT:</u>	Decomposes at 1310°C (2390°F)
<u>SOLUBILITY IN WATER:</u>	1.3 g/100 cc @ 20°C
<u>EVAPORATION RATE(Butyl Acetate = 1):</u>	Not applicable
<u>SPECIFIC GRAVITY:</u>	2.1 g/cc
<u>MOLECULAR WEIGHT:</u>	73.89
<u>COEFF. OIL/WATER:</u>	Not applicable
<u>ODOR THRESHOLD:</u>	Not applicable
<u>FLAMMABLE LIMITS:</u>	Upper: Not available Lower: Not available.
<u>FLASH POINT:</u>	Not applicable
<u>AUTOIGNITION TEMPERATURE:</u>	Not applicable
<u>VISCOSITY:</u>	Not applicable
<u>FLAMMABILITY:</u>	Not combustible.
<u>DECOMPOSITION TEMPERATURE:</u>	Decomposes at 1310°C (2390°F)
<u>EXPLOSIVE PROPERTIES:</u>	Not explosive
<u>OXIDIZING PROPERTIES:</u>	Not an oxidizer

10. STABILITY AND REACTIVITY

<u>CONDITIONS TO AVOID:</u>	Contact with acids
<u>STABILITY:</u>	Stable
<u>POLYMERIZATION:</u>	Will not occur
<u>HAZARDOUS DECOMPOSITION</u>	None
<u>PRODUCTS:</u>	
<u>INCOMPATIBLE MATERIALS:</u>	Acids

11. TOXICOLOGICAL INFORMATION

Eye Contact: Moderately irritating (rabbit)

[FMC I87-0998]

<u>Skin Contact:</u>	Minimally irritating; PII = 0.3/8.0 (rabbit)	[FMC I87-0999]
<u>Skin Absorption:</u>	Dermal LD ₅₀ : >2000 mg/kg (rat),	[FMC I96-2084]
<u>Ingestion:</u>	Oral LD ₅₀ : = 525 mg/kg (rat),	[RTECS]
<u>Inhalation:</u>	Inhalation LC ₅₀ : >0.80 mg/L (4 hr. rat); No mortality at maximum attainable concentration,	[FMC I93-1800]

Acute Effects From Overexposure:

Lithium carbonate has low oral and dermal toxicity and is moderately irritating to the eyes. It is not sensitizing and is essentially non-irritating to the skin.

Chronic Effects From Overexposure:

The use of this product in industrial and commercial applications presents no significant toxicity hazard. The symptoms described below are based on therapeutic applications where relatively large doses are taken orally by medically supervised patients.

Lithium carbonate is used therapeutically at 500-2000 mg/day oral doses for specific mental disorders. Therapeutic effects occur at blood levels of 2.8 - 8.3 mg of lithium per liter. Minimal signs of toxicity may also occur at these therapeutic levels and involve primarily gastrointestinal upset. Increased dosage can produce tremors, drowsiness and unsteady gait. Signs of toxicity resolve rapidly on cessation of treatment. Prolonged treatment at toxic levels result in dehydration, kidney damage, weight loss and thyroid disturbances.

Some studies of pregnant mice and rats were associated with birth defects but only at dose levels large enough to produce signs of severe maternal toxicity. Although data from the 1970's and 1980's suggested an increase in cardiovascular defects in babies born in women on lithium carbonate therapy, more recent studies have not found any association between lithium exposure and birth defects. Women receiving therapeutic lithium carbonate treatment at the time of confinement have the potential for delivery of a fetus with poor muscle tone, slowed heart rate and cyanosis. Full recovery usually occurs within 2-10 days postpartum. Therapeutic and greater levels of lithium may pose a risk to the conceptus and potential benefits to the mother are weighed carefully in clinical situations.

Exposure to lithium in industrial settings is not considered to pose a risk to human health. NIOSH studied 25 workers exposed to lithium-containing dust at air concentrations exceeding 10 mg/m³ (nuisance dust limit) and found that typical industrial exposure to lithium will not result in blood levels sufficiently high to produce toxicity in either adults or their offspring. [NIOSH, Health Hazard Evaluation report HHE80-036-922]

<u>Sensitization:</u>	Non-sensitizer (guinea pig) [FMC I93-1801]
<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 carbonate is expected to be moderately toxic to aquatic invertebrates and freshwater fish.

Daphnia magna: 48 hr. EC₅₀ = 33.2 mg/L [FMC Study I96-2085]

Rainbow trout: 96 hr. LC₅₀ = 30.3 mg/L [FMC Study I96-2086]

Chemical Fate Information:

No data available for the product.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

UN NUMBER: None
PROPER SHIPPING NAME: None
CLASSIFICATION: None
LABELS: None
PACKING GROUP: None
FLASH POINT: Not applicable
CUSTOM TARIFF NO: 2836.91.0050
MARINE POLLUTANT: No
PIH: Not designated 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 contains lithium carbonate which is subject to the reporting requirements of Section 313 of the Emergency Planning and Right-To-Know Act of 1986. This information must be included in all MSDS's that are copied and distributed for this material.

SECTION 302 EXTREMELY HAZARDOUS

SUBSTANCES (40 CFR 355): Not listed

CERCLA HAZARDOUS SUBSTANCE (40 CFR 302.4): Not listed

TSCA SEC 12B EXPORT NOTIFICATION: This product is not subject to TSCA 12 (b) Export Notification Requirements.

TSCA INVENTORY STATUS (40 CFR 710): Listed

CANADA

WHMIS: Product Identification No.: None
Hazard Classification: Class D, Division 2B (Eye irritant)
Ingredient Disclosure List: Not listed

16. OTHER INFORMATION

REVISION SUMMARY: Revision # 7: Correction of typographical error in composition, section 3.

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 1b

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