SECTION I - PRODUCT IDENTIFICATION AND PHYSICAL DATA

CHEMICAL NAME: Lithium Carbonate   COMMON NAME: Lithium Carbonate

CHEMICAL FORMULA: Li<sub>2</sub>CO<sub>3</sub> (CAS: 554-13-2)

APPEARANCE AND ODOR: White granules or powder. Odorless.

HAZARDOUS COMPONENTS OF MIXTURE: Lithium Carbonate is a compound, not a mixture.

VAPOR PRESSURE: Effectively Zero at 20°C   MELTING POINT: 618°C

FLASH POINT: Not Flammable   FLAMMABLE LIMITS: Not Flammable

OTHER CHARACTERISTICS: 99% Li<sub>2</sub>CO<sub>3</sub>
Basic - pH 11.4

SECTION II - FIRE, EXPLOSION, AND PHYSICAL HAZARD DATA

FIRE AND EXPLOSION HAZARDS: Not Flammable

REACTIVITY DATA: Stable material. Incompatible with concentrated acids.

EXTINGUISHING MEDIA: Not Flammable

SPECIAL FIRE FIGHTING PROCEDURES: Not Flammable

OTHER PHYSICAL HAZARDS: None

SECTION III - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Sweep up and return to container. Small quantities may be washed away with water.

WASTE DISPOSAL METHOD: Follow state and local regulations.

DATE OF ISSUE: 11 February 93
SUPERSEDES: 3 January 90

REVIEWED BY: D. B. Coghlan
TITLE: Manager, Special Projects
SECTION IV - HEALTH HAZARD DATA

EXPOSURE LIMIT VALUE(S): Neither OSHA nor ACGIH lists a threshold limit value for lithium carbonate, but Foote recommends that exposure not exceed 5mg/m³, one half of the ACGIH limit for nuisance dust.

PRIMARY ROUTE(S) OF EXPOSURE: Inhalation or ingestion.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: If accidental large doses were inhaled or ingested, the first symptoms would be tremor and nausea. If such symptoms occur, seek immediate medical attention.

EFFECTS OF OVEREXPOSURE: By the RCRA definition of acute toxicity, lithium carbonate is not a toxic chemical. Lithium carbonate is widely used as a medication for manic-depression. Thus, a substantial amount of information has been developed on its use for such purposes and on the effects and treatment of overdose conditions. The typical therapeutic dosage level in treatment is about 1000mg per day. Animal tests have shown an LD₅₀ (lethal dose for 50% fatality) through ingestion at substantially higher levels (over 500mg/kg body weight -- equivalent to 35,000mg for an average person). Exposure to lithium carbonate at the level of the ACGIH nuisance dust limit of 5mg/m³ for an 8-hour day, assuming a respiratory level of 30 liters per minute, would lead to the inhalation of approximately 72mg for such day.

Human case studies reveal that there is a slightly higher than normal incidence of birth defects among manic-depressive women on therapeutic dosage levels of lithium carbonate during pregnancy. In addition, some animal studies have shown a relationship between the administration of lithium carbonate to pregnant females at dosage levels equivalent to or higher than human therapeutic dosage levels and an increase in birth defects. Therefore, lithium carbonate at those levels may be considered potentially teratogenic (i.e., potentially interfering with normal embryo development) although the evidence on this is not conclusive. There is no evidence of teratogenic effects at lower levels and in view of the overall evidence, lithium carbonate would not be expected to be teratogenic at such low levels. Nevertheless, Foote recommends that pregnant women in the first trimester be excluded from processes where exposure is in excess of 5mg/m³.

POTENTIAL FOR CARCINOGENICITY: Lithium Carbonate is not listed as a carcinogen or potential carcinogen by the National Toxicology Program of the U.S. Public Health Service, nor has it been found to be a carcinogen or potential carcinogen by OSHA or the International Agency for Research on Cancer. Foote is not aware of any data indicating that lithium carbonate produces cancer.

CALIFORNIA PROPOSITION 65: On 1 January 91 the State of California added lithium carbonate to its list: "Chemicals known to the State to cause reproductive toxicity". In California workers exposed to lithium carbonate must each be warned as follows: "Warning: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm."
EMERGENCY/FIRST AID PROCEDURES:
On contact with skin, practice proper hygiene.
On contact with eyes, flush eyes thoroughly with potable water for 15 minutes.
On inhalation or ingestion of accidental overdose (over 1000mg) seek immediate medical attention.

SECTION V - SPECIAL PROTECTION AND PRECAUTIONS

VENTILATION AND ENGINEERING CONTROLS: Engineering controls (e.g., mechanical exhaust) should be in place in order to ensure that employee exposures to lithium carbonate do not exceed 5mg/m³.

PERSONAL PROTECTIVE EQUIPMENT: Under conditions in which lithium carbonate dust levels exceed 5mg/m³, NIOSH-approved dust respirators should be worn. Dust goggles, gloves and full length clothing help prevent the lithium carbonate from contact with body moisture.

SAFE HANDLING, USE AND STORAGE: No special precautions.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE: Thoroughly clean equipment before repairs. Wash out with water and collect the solution in storage containers. Wear personal protective equipment during cleanup or repair to prevent the lithium carbonate from contact with skin and eyes. If there is a possibility of producing a mist during clean out, wear a NIOSH-approved mist respirator.

ADDITIONAL INFORMATION REGARDING THIS MATERIAL AND APPROPRIATE EMERGENCY PROCEDURES MAY BE OBTAINED FROM:

CUSTOMER SERVICE DEPARTMENT
CYPRUS FOOTE MINERAL COMPANY
Suite #301
301 Lindenwood Drive
Malvern, PA 19355-1740
(215) 889-9605; Ext. 446

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