SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUBSTANCE: LITHIUM CHLORIDE BRINE with MOLYBDATE INHIBITOR
TRADE NAMES/SYNONYMS: None.
CHEMICAL FAMILY: Aqueous Inorganic Salt Solution
PRODUCT USE: Used for a variety of industrial and research applications.
FORMULA: LiCl/H2O and Li2MoO4
CREATION DATE: 04/12/96 REVISION DATE: 03/12/09 (see Section 16 for revision details)

SECTION 2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: WARNING! CAUSES SKIN AND EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED. CAN CAUSE CENTRAL NERVOUS SYSTEM EFFECTS AND KIDNEY DAMAGE. Clear, colorless, odorless solution. May cause respiratory tract irritation. This product is not flammable and is not reactive under most circumstances. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most serious health consequences reported for lithium compounds, such as Lithium Chloride, are adverse effects on the central nervous system from overexposures via ingestion. In terms of anticipated occupational situations for employees, the main health effect from overexposure would be irritation or burns of contaminated skin and eyes. INHALATION: Inhalation of mists or sprays may irritate the mouth, nose, and other tissues of the respiratory system. Inhalation of relatively large doses of this solution may cause ringing in the ears, nausea, vomiting, diarrhea, drowsiness, twitching, and blurred vision. CONTACT WITH SKIN OR EYES: Skin overexposure can cause itching, pain, and reddening. Prolonged or repeated skin exposures can cause dermatitis (dry, red skin). The solution can cause eye irritation; symptoms of such overexposure would be pain and reddening of the eyes. Prolonged eye contact may damage the eyes. SKIN ABSORPTION: Severe skin absorption exposure may cause symptoms similar to those described in “Ingestion”. INGESTION: Ingestion is not anticipated to be a significant route of occupational exposure. Acute or chronic ingestion of this product may cause ringing in the ears, nausea, vomiting, diarrhea, difficulty speaking, drowsiness, twitching, visual disturbances, and coma. Ingestion of relatively large quantities of this solution can cause kidney damage. Hexavalent molybdenum compounds, such as Lithium Molybdate (a component of this product), are readily absorbed through the gastrointestinal tract. Symptoms of ingestion overexposure may include severe gastrointestinal irritation, diarrhea and damage to the liver, spleen and kidneys. This product may also irritate or burn the mouth, throat, esophagus, and other tissues of the gastrointestinal tract. CHRONIC: Prolonged or repeated skin exposures can lead to dermatitis (dry, red skin). Chronic inhalation or ingestion overexposure may cause rash, ringing in the ears, nausea, vomiting, diarrhea, difficulty speaking, drowsiness, twitching, visual disturbances, coma, kidney damage, thyroid effects, irregular heart beat, low blood pressure, loss of appetite, and circulatory failure. See Section 11 (Toxicological Information) for additional information. TARGET ORGANS: ACUTE: Eyes, skin central nervous system. CHRONIC: Skin, central nervous system, reproductive system, kidneys, thyroid. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory, skin, central nervous system, and kidney conditions can be aggravated by overexposure to this product. Persons with significant cardiovascular or renal disease or sodium and water imbalance may also be at increased risk. Alertness may be impaired.

SECTION 3 COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>% w/w</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium Chloride</td>
<td>7447-41-8</td>
<td>31-40</td>
</tr>
<tr>
<td>Calcium Chloride</td>
<td>10043-52-4</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Lithium Molybdate</td>
<td>13568-40-6</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>% w/w</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and other components. Each of the other components are present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens). None of the other components contribute significant additional hazards at the concentrations present in this product.</td>
<td>Mixture</td>
<td>Balance</td>
</tr>
</tbody>
</table>

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2004 format.
SECTION 4 FIRST-AID MEASURES

Victims of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention if necessary. Take copy of label and MSDS to physician or health professional with victim. Refer to Section 11 (Toxicological Information, Recommendations to Physician) for specific information for physicians on treatment of poisoning of this product.

SKIN EXPOSURE: If this solution contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victims must seek immediate medical attention if adverse effect occurs. EYE EXPOSURE: If this solution contaminates the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victims must seek immediate medical attention if any adverse effect occurs.

INHALATION: If mists or sprays of this solution are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

INGESTION: If this solution is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING. If conscious, have victim rinse mouth with water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

SECTION 5 FIRE-FIGHTING MEASURES

FIRE EXTINGUISHING MATERIALS: This product is not flammable. Use fire extinguishing materials appropriate for surrounding fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product presents a moderate contact hazard to firefighters.
When involved in a fire, this product may decompose and produce irritating fumes and toxic gases (lithium and molybdenum compounds, hydrogen chloride).

Explosion Sensitivity to Static Discharge: Not sensitive

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. If possible, firefighters should control runoff water to prevent environmental contamination.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people. The minimum Personal Protective Equipment recommended for response to non-incidental releases should be Level C: double-gloves (nitrile gloves over latex gloves), chemical resistant suit and boots, hard-hat, and air-purifying respirator with high-efficiency particulate filter. Self-Contained Breathing Apparatus would be worn in situations where the oxygen level is below 19.5 % or is unknown. Absorb spilled liquid with poly pads or other suitable absorbent. Decontaminate the area thoroughly. Place all spill residue in a suitable container and seal. Dispose of in accordance with U.S. Federal, State, and local or Canadian solid waste disposal regulations (see Section 13, Disposal Considerations).

SECTION 7 HANDLING AND STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this solution ON YOU or IN YOU. Wash thoroughly after handling this solution. Do not eat, drink, or smoke while handling this product. Remove contaminated clothing immediately. Use ventilation and other engineering controls to minimize potential exposure to this solution. STORAGE AND HANDLING PRACTICES: All employees who handle this solution should be trained to handle it safely. Ensure containers of this solution are properly labeled. Open containers slowly on a stable surface. Read instructions provided with the product prior to use. Empty containers may contain residual material; therefore, empty containers must be handled with care. Storage area of Lithium Chloride Brine should be clearly identified, well illuminated, clear of obstruction, and accessible only to trained and authorized personnel. Store containers in a cool, dry location, away from direct sunlight, or sources of intense heat. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Keep container tightly closed when not in use. Storage areas should be made of fire resistant materials. Post warning signs in storage and use areas, as appropriate. Inspect all incoming containers before storage to ensure containers are properly labeled and not
SECTION 7 HANDLING AND STORAGE

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, as applicable. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Limits in Air</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACGIH-TLVs</td>
<td>OSHA-PELs</td>
<td>OTHER</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA mg/m³</td>
<td>STEL mg/m³</td>
<td>TWA mg/m³</td>
<td>STEL mg/m³</td>
</tr>
<tr>
<td>Lithium Chloride</td>
<td>NE</td>
<td>NE</td>
<td>15 (Total dust) 5 (Respirable fraction) as Particulates not otherwise classified</td>
<td>NE</td>
</tr>
<tr>
<td>Calcium Chloride</td>
<td>NE</td>
<td>NE</td>
<td>15 (Total dust) 5 (Respirable fraction) as Particulates not otherwise classified</td>
<td>NE</td>
</tr>
<tr>
<td>Lithium Molybdate</td>
<td>0.5 (Respirable fraction)</td>
<td>NE</td>
<td>5</td>
<td>NE</td>
</tr>
</tbody>
</table>

NE = Not Established. See Section 16 for Definition of other terms and acronyms used.

The information presented is based only on this product. The Exposure Controls and Personal Protection required will be dependent on the conditions present in the workplace, including the presence of other chemicals. PPE should be based on a Hazard Assessment as required in 29CFR1910.132. VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation, to ensure exposures are below the occupational exposure limits provided above. Mechanical exhaust may be needed. RESPIRATORY PROTECTION: Respiratory protection is not generally needed when using this solution. Maintain airborne contaminant concentrations below exposure limits listed above. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA’s Respiratory Protection Standard (1910.134-1998). EYE PROTECTION: Splash goggles or safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, and appropriate Canadian Standards. HAND PROTECTION: Wear neoprene gloves for routine industrial use. If necessary, refer to U.S. OSHA 29 CFR 1910.138 and appropriate Standards of Canada. BODY PROTECTION: Use body protection appropriate for task (e.g., Apron or Body suit). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee’s feet may be exposed to electrical hazards, wear foot protection, as described in U.S. OSHA 29 CFR 1910.136. Where there is any possibility that an employee’s eyes may be exposed to Lithium Chloride, the employer should provide an eye wash fountain within the immediate work area for emergency use.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

VAPOR DENSITY (air = 1): Not established. EVAPORATION RATE (nBuAc=1): Not established. SPECIFIC GRAVITY (water = 1): 1.26 FREEZING/MELTING POINT: < 0°C (< 23°F) SOLUBILITY IN WATER @ 28°C: 1 g/ 1.3 mL (cold) BOILING POINT: 134°C (273°F) VAPOR PRESSURE, mm Hg @ 20°C: Not established. pH: 8.0-10.0 ODOR THRESHOLD: Not applicable. MOLECULAR WEIGHT: 42.39 (Lithium Chloride) COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established. FLASH POINT: Not applicable. AUTOIGNITION TEMPERATURE: Not applicable. FLAMMABLE LIMITS (in air by volume): Not applicable APPEARANCE AND COLOR: Clear, colorless, odorless solution. HOW TO DETECT THIS SUBSTANCE (warning properties): This solution does not have any unique warning properties.
**SECTION 10 STABILITY AND REACTIVITY**

**STABILITY:** Stable.

**DECOMPOSITION PRODUCTS:** Thermal decomposition of this product can produce hydrogen chloride and lithium and molybdenum compounds.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** This solution is not compatible with strong acids, strong oxidizers, water-reactive materials, and reactive interhalogens (e.g. bromine trifluoride). Lithium Chloride can slowly corrode steel, certain types of stainless steel, iron alloys, nickel alloys and other metals.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**CONDITIONS TO AVOID:** Avoid mixing this solution with incompatible chemicals.

**SECTION 11 TOXICOLOGICAL INFORMATION**

**TOXICITY DATA:** Toxicology data for components of this product present in greater than 1% concentration are provided below:

<table>
<thead>
<tr>
<th><strong>LITHIUM CHLORIDE:</strong></th>
<th><strong>CALCIUM CHLORIDE:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Draize Test (Skin-Rabbit) 500 mg/24 hours: Severe</td>
<td>Standard LD$_{50}$ (Oral-Rat) 1 gm/kg Standard Draize</td>
</tr>
<tr>
<td>Test (Eye-Rabbit) 100 mg/24 hours: Moderate</td>
<td>LD$_{50}$ (Oral-Mouse) 1940 mg/kg</td>
</tr>
<tr>
<td>LD$_{50}$ (Oral-Rat) 526 mg/kg</td>
<td><strong>LITHIUM MOLYBDATE:</strong> No data available</td>
</tr>
<tr>
<td>LD$<em>{50}$ (Oral-Mouse) 1165 mg/kg LD$</em>{50}$ (Oral-Rabbit) 800 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

**ADDITIONAL TOXICITY DATA:** Injection of rats with low levels of Lithium Chloride produced reversible kidney damage, but high doses produced irreversible damage and death. Central nervous system effects (hyperirritability followed by muscular weakness, paralysis and death) occurred in rats injected with about 120 or 180 mg/kg Lithium Chloride. Injections of only 60 mg/kg did not produce acute symptoms in rats. A dose of 60 mg/kg (route not reported) given to cats caused extreme muscle weakness, severe stomach problems and death within days.

**CARCINOGENICITY STATUS:** As a molybdenum soluble compound, the Lithium Molybdate component of this product is listed as follows: ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans. Substances that are carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans, except under uncommon or unlikely routes of exposure. Worker exposure to an A3 carcinogen should be controlled to levels as low as reasonably achievable below the TLV.); NOTICE OF INTENDED CHANGE TO ACGIH TLV-A2 was withdrawn in 2003.

The remaining components of this product are not listed as a carcinogen or suspected carcinogen by IARC, NTP, OSHA or ACGIH.

**IRRITANCY OF PRODUCT:** This solution can irritate the skin and eyes.

**SENSITIZATION TO THE PRODUCT:** The components of this solution are not known to be skin or respiratory sensitizers.

**REPRODUCTIVE TOXICITY INFORMATION:** Listed below is information concerning the effects of this product and its components on the human reproductive system.

- **Mutagenicity:** Human mutation data are available for the Lithium Chloride component of this product; these data were obtained during clinical studies on specific human tissues exposed to high doses of this compound. Animal mutation data are available for the Calcium Chloride component of this product; these data were obtained during clinical studies on specific animal tissues exposed to high doses of this compound. Calcium Chloride has caused mutagenic effects *in-vitro* in two rat cell tests (UDS assay and cytogenetic analysis), but was negative in an in-vitro hamster cell test (transformation of Syrian Hamster Embryo cells). **Embryotoxicity:** The components of this product are not reported to produce embryotoxic effects in humans. A decrease in the number of deliveries was observed after injection of pregnant mice with 2 mg of Lithium Chloride (approximately 80 mg/kg) followed by high daily doses in the diet during pregnancy (1% of the diet). **Teratogenicity:** The components of this product are not reported to produce teratogenic effects in humans. Clinical studies on test animals exposed to relatively high doses of the Lithium Chloride component of this product provided teratogenic data. Teratogenic effects (eye, ear and craniofacial deformations) were seen following the injection of pregnant rats with 50 mg (approximately. 200 mg/kg)Lithium Chloride followed by daily injections of approximately 80 mg/kg throughout the pregnancy; the doses also produced toxicity in the mothers of the deformed pups. **Reproductive Toxicity:** The components of this product are not reported to produce adverse reproductive effects in humans. Clinical studies on test animals exposed to relatively high doses of the Lithium Chloride component of this product provided reproductive toxicity data. Injections of lithium chloride (doses of 5-15 mg/rat/day for up to 34 days) caused toxic effects, including decreased fertility of male rats.

**ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs):** Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for the components of this product.
SECTION 12 ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: This solution is stable in the environment. EFFECT OF MATERIAL ON PLANTS or ANIMALS: The effects on exposed animals would be primarily irritation of contaminated tissue. The main effect on plants would be the increase in salinity of contaminated soils if large volumes of this solution are released. EFFECT OF CHEMICAL ON AQUATIC LIFE: Releases of large quantities of this solution can be detrimental to an aquatic environment by altering the salinity of a body of water. ACUTE AQUATIC TOXICITY: The following aquatic toxicity data are available for the components of this product:

**LITHIUM CHLORIDE:**
- Toxicity Critical Limit (fish: unspecified species) = 100 mg/L Mortality (goldfish) 22-27 hours = 3750 mg/L LC (Fish: unspecified species) 24 hours = 2600 mg/L Total Mortality (pike-perch fry) several hours = 50 µg/L EC50 Daphnia, 249 mg/L, 48h
- Calcium Chloride: TD (rock bass) = 555 ppm/ 168 hours/ tap water LD50 (sunfish) = 10,650 ppm/ 96 hours/ fresh water TLm (marine fish) = 2400 ppm/ 48 hours/ sea water TLm (bluegill) = 8400 mg/L/ 24 hours

**CALCIUM CHLORIDE:**
- Degradability: Calcium Chloride does not biodegrade.
- Log P(oct) = -3.0 LITHIUM CHLORIDE: Log P(oct) = -2.66

SECTION 13 DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with regulations of Canada and its Provinces. This solution, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local solid waste regulatory authority. U.S. EPA WASTE NUMBER: Not applicable.

SECTION 14 TRANSPORT INFORMATION

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION. NORTH AMERICAN EMERGENCY RESPONSE GUIDE NUMBER (2008): Not Applicable MARINE POLLUTANT: No component of this product is designated as a Marine Pollutant by the DOT (per 49 CFR 172.101, Appendix B). TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not considered a Dangerous Goods, per regulations of Transport Canada. EMERGENCY RESPONSE CONTACT FOR AN INCIDENT DURING TRANSPORTATION: CHEMTREC 1-800-424-9300 or 1-703-527-3887

SECTION 15 REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS: U.S. SARA REPORTING REQUIREMENTS: The components of this solution are subject to the reporting requirements of the Comprehensive Environmental Response, Compensation, and Liability Act and Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act as follows: CERCLA SECTION 103 (40 CFR 302.4) Listed CERCLA Hazardous Substance: No SARA SECTION 302 (40 CFR 355.30) Extremely Hazardous Substance: No SARA SECTION 304 (40 CFR 355.40) RQ-CERCLA or SARA 302: No SARA SECTION 313 (40 CFR 372.65) Toxic Chemical Release Inventory (TRI/Form R): No U.S. SARA SECTION 311/312 HAZARD CATEGORIES: Acute Health, Chronic Health U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable. U.S. TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory. U.S. TSCA 12(b) EXPORT NOTIFICATION: TSCA 12(b) Notification is not required, per 40 CFR 707, for the components of this product. OTHER U.S. FEDERAL REGULATIONS: Not applicable. U.S. STATE REGULATORY INFORMATION: The components of this product are covered under specific State regulations, as denoted below Massachusetts - Substance List: No. Michigan - Critical Materials Register: Lithium Compounds. New Jersey - Right to Know Hazardous Substance List: No. Pennsylvania - Hazardous Substance List: No. CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this product is on the California Proposition 65 lists. ANSI STANDARD LABELING (Precautionary Statements): **WARNING!** CAUSES SKIN AND EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED. CAN CAUSE CENTRAL NERVOUS SYSTEM EFFECTS AND KIDNEY DAMAGE.
SECTION 15 REGULATORY INFORMATION (continued)

ANSI STANDARD LABELING (Precautionary Statements): **WARNING!** CAUSES SKIN AND EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED. CAN CAUSE CENTRAL NERVOUS SYSTEM EFFECTS AND KIDNEY DAMAGE. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Use in well-ventilated area. Do not take internally. Wear gloves, goggles, and appropriate body protection. FIRST-AID: In case of skin or eye contact, flush skin with water for 15 minutes. Remove contaminated clothing and shoes. Seek medical attention if irritation or symptoms of exposure develop. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention. If ingested, do not induce vomiting. Seek immediate medical attention. IN CASE OF FIRE: Use extinguishing media appropriate for the surrounding fire. IN CASE OF SPILL: Absorb spilled material with polypads or other suitable absorbent. Place in a suitable container. Consult Material Safety Data Sheet before use.

ADDITIONAL CANADIAN REGULATIONS: CANADIAN DSL/NDSL STATUS: The components of this product are on the DSL. CANADIAN WHMIS SYMBOLS: Class D2B Other Toxic Effects-Skin Irritation, Eye Irritation; (see final page of this document).

SECTION 16 OTHER INFORMATION

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATING: Health Hazard = 2; Fire Hazard = 0; Physical Hazard = 0 NFPA RATING: Health Hazard = 2; Fire Hazard = 0; Instability Hazard = 0 4 = Severe Hazard 3 = Serious Hazard 2 = Moderate Hazard 1 = Slight Hazard 0 = Minimal Hazard

The information in this Material Safety Data Sheet is based on data that Chemetall Foote Corp. believes to be reliable as of the MSDSs date of revision. Chemetall Foote Corp. makes no warranty or representation of any kind that the MSDS does not contain errors. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the control of Chemetall Foote Corp., there are no warranties, expressed or implied, and Chemetall Foote Corp. assumes no liability in connection with the use of this information. Nothing herein is to be taken as a license to operate under or a recommendation to infringe on any patents. Any use of these data and information must be determined by the user to be in accordance with Federal, State and local laws and regulations.

REVISIONS MADE IN 2009: Section 1 (hours) 2 (Emergency Overview), 5 (Moved flammability data to Section 9), 15 (Added SAR NA 311/312 Hazard Classification)

DEFINITIONS OF EXPOSURE LIMIT TERMS AND ABBREVIATIONS ACGIH American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **TLV** - Threshold Limit Value - an airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (TWA), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (C). Skin absorption effects must also be considered. **OSHA** - U.S. Occupational Safety and Health Administration. **PEL** - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based on the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, “Vacated 1989 PEL,” is placed next to the PEL which was vacated by Court Order. **IDLH** - Immediately Dangerous to Life and Health -This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. The **DFG MAK** is the Republic of Germany’s Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). NIOSH issues exposure guidelines called Recommended Exposure Levels (RELs). When no exposure guidelines are established, an entry of **NE** is made for reference.
**LITHIUM CHLORIDE BRINE with MOLYBDATE INHIBITOR**

**GRAPHICAL REPRESENTATION OF HAZARDS**

**HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATING**

<table>
<thead>
<tr>
<th></th>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
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<tr>
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<tr>
<td>PHYSICAL HAZARD</td>
<td>(YELLOW)</td>
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</tr>
</tbody>
</table>

**PROTECTIVE EQUIPMENT**

- EYES
- RESPIRATORY
- HANDS
- BODY

**SEE SECTION 8**

For Routine Industrial Applications

**NATIONAL FIRE PROTECTION SYSTEM RATING**

<table>
<thead>
<tr>
<th>FLAMMABILITY</th>
<th>HEALTH</th>
<th>INSTABILITY</th>
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</thead>
<tbody>
<tr>
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<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**WHMIS SYMBOL**

Class D2B: Materials Causing Other Toxic Effects

![WHMIS Symbol](image-url)