MATERIAL SAFETY DATA SHEET

SECTION 1. --- --- --- --- CHEMICAL IDENTIFICATION --- --- --- ---

PRODUCT #: L6375
NAME: LITHIUM SULFATE

SECTION 2. --- --- --- --- COMPOSITION/INFORMATION ON INGREDIENTS --- --- --- ---

CAS #: 10377-49-7
MF: Li2SO4
SYNONYMS:
LITHIUM SULPHATE * SULFURIC ACID, DILITHIUM SALT * SULFURIC ACID,
LITHIUM SALT (1:2) *

SECTION 3. --- --- --- --- HAZARDS IDENTIFICATION --- --- --- ---

LABEL PRECAUTIONARY STATEMENTS
HARMFUL
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
POSSIBLE RISK OF IRREVERSIBLE EFFECTS.
TARGET ORGAN(S):
NERVES
DO NOT INHALE DUST.
WEAR SUITABLE PROTECTIVE CLOTHING.

SECTION 4. --- --- --- --- FIRST-AID MEASURES --- --- --- ---

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS
AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED
CLOTHING AND SHOES.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. --- --- --- --- FIRE FIGHTING MEASURES --- --- --- ---

EXTINGUISHING MEDIA
NONCOMBUSTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO
PREVENT CONTACT WITH SKIN AND EYES.

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

PRODUCT #: L6375
NAME: LITHIUM SULFATE
MF#: LT20451

CUSTOM#: 2-097-94816
P.O.#: UN3-41251

SECTION 1. UNUSUAL FIRE AND EXPLOSION HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 2. ACCIDENTAL RELEASE MEASURES
EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
SLEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 3. HANDLING AND STORAGE
REFER TO SECTION 8.

SECTION 8. EXPOSURE CONTROLS/PERSOAL PROTECTION
WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY SODGES, OTHER PROTECTIVE CLOTHING.
USE ONLY IN A CHEMICAL Fume HOOD.
SAFETY SHOWER AND EYE BATH.
DO NOT BREATH DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
POSSIBLE TERATOGEN.
HARMFUL SOLID.
KEEP TIGHTLY CLOSED.
HYGROSCOPIC.
STORE IN A COOL DRY PLACE.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES
APPEARANCE AND ODOR
WHITE GRANULAR POWDER
MELTING POINT: 345 C
SPECIFIC GRAVITY: 2.220

CONTINUED ON NEXT PAGE
PRODUCT #: L6375
NAME: LITHIUM SULFATE
MF#: L120451

SECTION 10. --- --- --- --- STABILITY AND REACTIVITY --- --- --- ---

INCOMPATIBILITIES
STRONG OXIDIZING AGENTS
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
SULFUR DIOXIDES

SECTION 11. --- --- --- --- TOXICOLOGICAL INFORMATION --- --- --- ---

ACUTE EFFECTS
HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
MAY CAUSE IRRITATION.

CHRONIC EFFECTS
OVEREXPOSURE MAY CAUSE REPRODUCTIVE DISORDER(S) BASED ON TESTS WITH LABORATORY ANIMALS.
TARGET ORGAN(S):
NERVES
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

ADDITIONAL INFORMATION
LARGE DOSES OF LITHIUM ION HAVE CAUSED DIZZINESS AND PROSTRATION, AND CAN CAUSE KIDNEY DAMAGE IF SODIUM INTAKE IS LIMITED. DEHYDRATION, WEIGHT LOSS, DERMATOLOGICAL EFFECTS AND THYROID DISTURBANCES HAVE BEEN REPORTED. CENTRAL NERVOUS SYSTEM EFFECTS THAT INCLUDE SLURRED SPEECH, BLURRED VISION, SENSORY LOSS, ATAXIA AND CONVULSIONS MAY OCCUR. DIARRHEA, VOMITING AND NEUROMUSCULAR EFFECTS SUCH AS TREMOR, CLonus AND HYPERACTIVE REFLEXES MAY OCCUR AS A RESULT OF REPEATED EXPOSURE TO LITHIUM ION.

RTECS NO. DJ6419000
LITHIUM SULFATE (2:1)

TOXICITY DATA
ORL-MUS LD50: 1190 MG/KG
SCU-MUS LD50: 953 MG/KG
INS-MAM LD50: 560 MG/KG

TARGET ORGAN DATA
BEHAVIORAL (COMA)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

SECTION 12. --- --- --- --- ECOLOGICAL INFORMATION --- --- --- ---

DATA NOT YET AVAILABLE.

CONTINUED ON NEXT PAGE
SECTION 13. -- --- -- -- -- -- -- DISPOSAL CONSIDERATIONS -- --- --- --- ---

FOR SMALL QUANTITIES: CAUTIOUSLY ADD TO A LARGE STIRRED EXCESS OF WATER. ADJUST THE pH TO NEUTRAL. SEPARATE ANY INSOLUBLE SOLIDS OR LIQUIDS AND PACKAGE THEM FOR HAZARDOUS-WASTE DISPOSAL. FLUSH THE AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. THE HYDROLYSIS AND NEUTRALIZATION REACTIONS MAY GENERATE HEAT AND FUMES WHICH CAN BE CONTROLLED BY THE RATE OF ADDITION. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. -- --- --- --- --- TRANSPORT INFORMATION -- --- --- --- ---

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. -- --- --- --- --- REGULATORY INFORMATION -- --- --- --- ---

REVIEWS, STANDARDS, AND REGULATIONS

NOHS 1974: H2O 810.300; NIS 5; TFE 516; NOS 6; TFE 4562
NOES 1983: H2O 810.300; NIS 5; TFE 338; NOS 1; TFE 9278; TFE 5149
EPA TSCA CHEMICAL INVENTORY, JUNE 1990

SECTION 16. -- --- --- --- --- OTHER INFORMATION--- --- --- --- ---

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.

COPYRIGHT 1993 SIGMA CHEMICAL CO.
LICENSE GRANTED TO MAKE UNLIMITED COPIES FOR INTERNAL USE ONLY.