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M A T E R I A L S A F E T Y D A T A S H E E T

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

CATALOG #: 378828
 NAME: LITHIUM FLUORIDE, RANDOM CRYSTALS, OPTICAL
 GRADE

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

CAS #: 7789-24-4
 MF: FLI
 EC NO: 232-152-0

SYNONYMS

TLD 100 * LITHIUM FLUORURE (FRENCH) *

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

LABEL PRECAUTIONARY STATEMENTS

TOXIC

MAY CAUSE HARM TO THE UNBORN CHILD.
 MAY CAUSE HARM TO BREASTFED BABIES.
 POSSIBLE RISK OF IMPAIRED FERTILITY.
 TOXIC IF SWALLOWED.

CAUSES SEVERE IRRITATION.

TARGET ORGAN(S):

CENTRAL NERVOUS SYSTEM

KIDNEYS

AVOID EXPOSURE - OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE

IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
 PROTECTION.

DO NOT BREATHE DUST.

HYGROSCOPIC

KEEP TIGHTLY CLOSED.

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

SYMPTOMS MAY BE DELAYED UP TO 24 HOURS DEPENDING UPON THE FLUORIDE
 ION CONCENTRATION. PREVENTION OF ABSORPTION OF THE FLUORIDE ION IN
 CASES OF INGESTION CAN BE OBTAINED BY GIVING MILK, CHEWABLE CALCIUM
 CARBONATE TABLETS OR MILK OF MAGNESIA TO CONSCIOUS VICTIMS. CONDITIONS
 SUCH AS HYPOCALCEMIA, HYPOMAGNESEMIA AND CARDIAC ARRHYTHMIAS SHOULD
 BE MONITORED FOR, SINCE THEY CAN OCCUR AFTER EXPOSURE.

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.

ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS
 WITH FINGERS.

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

WATER SPRAY.

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES

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

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES- - - - -

EVACUATE AREA.

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.

SWEEP 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 7. - - - - - HANDLING AND STORAGE- - - - -

REFER TO SECTION 8.

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

SAFETY SHOWER AND EYE BATH.

USE ONLY IN A CHEMICAL FUME HOOD.

DO NOT BREATHE DUST.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

AVOID PROLONGED OR REPEATED EXPOSURE.

WASH THOROUGHLY AFTER HANDLING.

KEEP TIGHTLY CLOSED.

STORE IN A COOL DRY PLACE.

SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -

APPEARANCE AND ODOR

COLORLESS CRYSTALS

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

INCOMPATIBILITIES

STRONG OXIDIZING AGENTS

STRONG ACIDS

SENSITIVE TO MOISTURE

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

TOXIC FUMES OF:

HYDROGEN FLUORIDE

LITHIUM OXIDES

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

ACUTE EFFECTS

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.

CAUSES SEVERE IRRITATION.

HIGH CONCENTRATIONS ARE EXTREMELY DESTRUCTIVE TO TISSUES OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES AND SKIN.

SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND VOMITING.

SYMPTOMS OF EXPOSURE TO INORGANIC FLUORIDES MAY INCLUDE SALIVATION, NAUSEA, VOMITING, ABDOMINAL PAIN, FEVER, AND LABORED BREATHING.

CHRONIC EFFECTS

MAY CAUSE CONGENITAL MALFORMATION IN THE FETUS.

MAY CAUSE REPRODUCTIVE DISORDERS.

CYANOSIS AND T-WAVE INVERSION HAVE OCCURRED IN THE BREAST-FED INFANTS OF WOMEN RECEIVING LITHIUM CARBONATE THERAPY.

TARGET ORGAN(S):

CENTRAL NERVOUS SYSTEM

KIDNEYS

CARDIOVASCULAR SYSTEM

THYROID

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.

SYMPTOMS OF FLUORIDE OVEREXPOSURE MAY INCLUDE SALIVATION, NAUSEA, VOMITING, ABDOMINAL PAIN, FEVER, LABORED BREATHING. FLUORIDE ION CAN REDUCE SERUM CALCIUM LEVELS POSSIBLY CAUSING FATAL HYPOCALCEMIA.

PROLONGED EXPOSURE TO FLUORIDE DUSTS, VAPORS OR MISTS RESULTS IN PERFORATION OF THE NASAL SEPTUM. CHRONIC EFFECTS INCLUDE EXCESSIVE CALCIFICATION OF THE BONES, LIGAMENTS AND TENDONS.

CYANOSIS AND T-WAVE INVERSION HAVE OCCURRED IN THE BREAST-FED INFANTS OF WOMEN RECEIVING LITHIUM CARBONATE THERAPY.

RTECS #: OJ6125000

LITHIUM FLUORIDE

TOXICITY DATA

ORL-RAT LD50:143 MG/KG

FATOA0 40,329,1977

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.

SECTION 13. - - - - - DISPOSAL CONSIDERATIONS - - - - -
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.

OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -
CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

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

EUROPEAN INFORMATION

TOXIC

R 61

MAY CAUSE HARM TO THE UNBORN CHILD.

R 64

MAY CAUSE HARM TO BREASTFED BABIES.

R 62

POSSIBLE RISK OF IMPAIRED FERTILITY.

R 25

TOXIC IF SWALLOWED.

S 53

AVOID EXPOSURE - OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.

S 45

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

S 36/37/39

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

S 22

DO NOT BREATHE DUST.

TLV AND SOURCE

FOR FLUORIDES AS FLUORIDE:

ACGIH TLV-TWA: 2.5 MG/M3.

OSHA PEL: 8H TWA 2.5 MG/M3.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-TWA 2.5 MG(F)/M3

DTLVS* TLV/BEI,1999

ACGIH TLV-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN DTLVS* TLV/BEI,1999

MSHA STANDARD-AIR:TWA 2.5 MG(F)/M3

DTLVS* 3,116,1971

OSHA PEL (GEN INDU):8H TWA 2.5 MG(F)/M3

CFRGR 29,1910.1000,1994

OSHA PEL (CONSTRUC):8H TWA 2.5 MG(F)/M3

CFRGR 29,1926.55,1994

OSHA PEL (SHIPYARD):8H TWA 2.5 MG(F)/M3

CFRGR 29,1915.1000,1993

OSHA PEL (FED CONT):8H TWA 2.5 MG(F)/M3

CFRGR 41,50-204.50,1994

OEL-AUSTRALIA: TWA 2.5 MG(F)/M3, JAN1993

OEL-AUSTRIA: MAK 2.5 MG(F)/M3, JAN1999

OEL-BELGIUM: TWA 2.5 MG(F)/M3, JAN1993

OEL-FINLAND: TWA 2.5 MG(F)/M3, JAN1999

OEL-FRANCE: VME 2.5 MG(F)/M3, JAN1999

OEL-GERMANY: MAK 2.5 MG(F)/M3, JAN1999

OEL-HUNGARY: TWA 1 MG(F)/M3, STEL 2 MG(F)/M3, JAN1993

OEL-THE NETHERLANDS: MAC-K 3.5 MG(F)/M3, JAN1999

OEL-NORWAY: TWA 0.6 MG(F)/M3, JAN1999

OEL-THE PHILIPPINES: TWA 2.5 MG(F)/M3, JAN1993

OEL-POLAND: MAC(TWA) 1 MG(HF)/M3, MAC(STEL) 3 MG(HF)/M3, JAN1999

OEL-RUSSIA: STEL 0.2 PPM (1 MG/M3), JAN1993

OEL-SWEDEN: NGV 2 MG(F)/M3, JAN1999

OEL-SWITZERLAND: MAK-W 1.8 PPM (1.5 MG(F)/M3), KZG-W 3.6 PPM (3.0

MG(F)/M3), JAN1999

OEL-THAILAND: TWA 2.5 MG(F)/M3, JAN1993

OEL-TURKEY: TWA 2.5 MG(F)/M3, JAN1993

OEL-UNITED KINGDOM: TWA 2.5 MG(F)/M3, SEP2000

OEL IN ARGENTINA, BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV;

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV

NIOSH REL TO FLUORIDES, INORGANIC-AIR:10H TWA 2.5 MG(F)/M3

NIOSH* DHHS #92-100,1992

NOHS 1974: HZD M1010; NIS 12; TNF 592; NOS 5; TNE 2853

NOES 1983: HZD M1010; NIS 17; TNF 390; NOS 11; TNE 3854; TFE 46

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY

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

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