MATERIAL SAFETY DATA SHEET

SECTION 1. - - - - - - - - CHEMICAL IDENTIFICATION- - - - - - - -
CATALOG #: 318930
NAME: FLUORIDE, VOLUMETRIC STANDARD, SOLUTION IN WATER

SECTION 2. - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - -
CAS #: 7681-49-4
MF: FNA
EC NO: 231-667-8
SYNONYMS
ALCOA SODIUM FLUORIDE * ANTIBULIT * CAVI-TROL * CHEMIFLUOR * CREDO * DISODIUM DIFLUORIDE * FDA 0101 * F1-TABS * FLORIDINE * FLOROCID * FLOZENGES * FLUORAL * FLUORIDENT * FLUORIDE, SODIUM * FLUORID SONY (CZECH) * FLORIGARD * FLORINEED * FLORINGE * FLORITAB * FLOROCID * FLOOR-O-ROTE * FLUOROL * FLUORURE DE SODIUM (FRENCH) * FLURA * FLURA DROPS * FLURA-GEL * FLURA-LOZ * FLURCARE * FLURSOL * FUNGOL B * GEL II * GELUTION * GLEEM * IRADICAV * KARIDUM * KARIGEL * KARI-RINSE * LEA-COV * LEMOFUR * LURIDE * LURIDE LOZI-TABS * LURIDE-SF * NAPEEN * NAPPAK * NA PRINSE * NATRIUM FLUORIDE * NCI-C55221 * NUFLOUR * OSSALIN * OSSIN * PEDIAPLOR * PEDIIDENT * PENNWHITE * PEGAMINT * PHOS-FLUR * POINT TWO * PREDENT * RAFLUOR * RESCUE SQUAD * ROACH SALT * SODIUM FLUORIDE CYCLIC DIMER * SODIUM FLUORURE (FRENCH) * SODIUM HYDROFLUORIDE * SODIUM MONOFLUORIDE * SO-FLO * STAY-FLO * STUDAFLUOR * SUPER-DENT * T-FLUORIDE * THERA-FLUR * THERA-FLUR-N * TRISODIUM TRIFLUORIDE *

SECTION 3. - - - - - - - HAZARDS IDENTIFICATION - - - - - - -
LABEL PRECAUTIONARY STATEMENTS
CAUTION: AVOID CONTACT AND INHALATION.

SECTION 4. - - - - - - - FIRST-AID MEASURES- - - - - - -
HYDROFLUORIC (HF) ACID BURNS REQUIRE IMMEDIATE AND SPECIALIZED FIRST AID AND MEDICAL TREATMENT. SYMPTOMS MAY BE DELAYED UP TO 24 HOURS DEPENDING ON THE CONCENTRATION OF HF. AFTER DECONTAMINATION WITH WATER, FURTHER DAMAGE CAN OCCUR DUE TO PENETRATION/ABSORPTION OF THE FLUORIDE ION. TREATMENT SHOULD BE DIRECTED TOWARD BINDING THE FLUORIDE ION AS WELL AS THE EFFECTS OF EXPOSURE. SKIN EXPOSURES CAN BE TREATED WITH A 2.5% CALCIUM GLUCONATE GEL REPEATED UNTIL BURNING CEASES. MORE SERIOUS SKIN EXPOSURES MAY REQUIRE SUBCUTANEOUS CALCIUM GLUCONATE EXCEPT FOR DIGITAL AREAS UNLESS THE PHYSICIAN IS EXPERIENCED IN THIS TECHNIQUE, DUE TO ABSORPTION FOR TISSUE INJURY FROM INCREASED PRESSURE. ABSORPTION CAN RAPIDLY OCCUR THROUGH THE SUBUNGUAL AREAS AND SHOULD BE CONSIDERED WHEN UNDERGOING DECONTAMINATION. 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.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN IMMEDIATELY.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN.
IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING
THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.

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- - - - - - - -
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.
EVACUATE AREA.

SECTION 7. - - - - - - HANDLING AND STORAGE- - - - - - - - -
REFER TO SECTION 8.

SECTION 8. - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
WASH THOROUGHLY AFTER HANDLING.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
NIOSH/MSHA-APPROVED RESPIRATOR.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
CHEMICAL SAFETY GOGGLES.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.

SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -
APPEARANCE AND ODOR
CLEAR COLORLESS LIQUID

PHYSICAL PROPERTIES
FLASHPOINT: NONE
SPECIFIC GRAVITY: 1.005

SECTION 10. - - - - - - - STABILITY AND REACTIVITY - - - - - - -
STABILITY
STABLE.
INCOMPATIBILITIES
SENSITIVE TO MOISTURE
STRONG ACIDS
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
HYDROGEN FLUORIDE
SODIUM OXIDES
HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.

SECTION 11. - - - - - TOXICOLOGICAL INFORMATION - - - - - - -
ACUTE EFFECTS
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
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.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND
VOMITING.
EXPOSURE CAN CAUSE:
STOMACH PAINS, VOMITING, DIARRHEA.
PROLONGED EXPOSURE CAN CAUSE:
DAMAGE TO THE LUNGS
CAUSES SKIN IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
CAUSES EYE IRRITATION.
MAY BE HARMFUL IF INHALED.
MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
TOXIC IF SWALLOWED.

CHRONIC EFFECTS
THIS PRODUCT IS OR CONTAINS A COMPONENT THAT IS NOT CLASSIFIABLE AS
TO ITS CARCINOGENICITY BASED ON ITS IARC, ACGIH, NTP OR EPA
CLASSIFICATION.
TARGET ORGAN(S):
HEART, KIDNEYS
BONES
NERVES
G.I. SYSTEM
TEETH
DAMAGE TO THE LUNGS

RTECS #: WB0365000
SODIUM FLUORIDE

IRRITATION DATA
EYE-RBT 20 MG/24H MOD

TOXICITY DATA
ORL-WNN LDLO: 90 MG/KG
ORL-WNN LDLD: 360 MG/KG
ORL-HNN LDLO: 71 MG/KG
ORL-HNN LDLD: 75 MG/KG
ORL-RAT LD50: 52 MG/KG
IPR-RAT LD50: 22 MG/KG
SCU-RAT LD50: 175 MG/KG
IVN-RAT LD50: 26 MG/KG
ORL-MUS LD50: 57 MG/KG
IPR-MUS LD50: 38 MG/KG
SCU-MUS LD50: 115 UG/KG
68(3), 55P-74P, 1972
IVN-MUS LD50: 50830 UG/KG
IVN-MKY LD50: 26600 UG/KG
ORL-RBT LD50: 200 MG/KG
ORL-DOM LD50: 100 MG/KG
ORL-BWD LD50: 110 MG/KG
28ZPAK -,20,1972
JAMAAP 81,811,1923
JAMAAP 100,97,1933
85KYAH 11,1361,1989
PCOC** -,1033,1966
NTIS** UR-3490-95
XEURAQ UR-154,1951
OYYA2 2,411,1968
TXAPA9 3,278,1961
SHGKA3 80,1519,1980
IMEMDT 27,237,1982
NPKZAU
IMEMDT 27,237,1982
APTOA6 22,99,1965
JEENAI 61,751,1968
NEZTAF 30,199,1982
AECTCV 16,483,1987

TARGET ORGAN DATA
PERIPHERAL NERVE AND SENSATION (PARESTHESIA)
SENSE ORGANS AND SPECIAL SENSES (OLFACTION TUMORS)
SENSE ORGANS AND SPECIAL SENSES (PTOSIS)
SENSE ORGANS AND SPECIAL SENSES (OTHER EYE EFFECTS)
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (TREMOR)
BEHAVIORAL (FLUID INTAKE)
BEHAVIORAL (MUSCLE WEAKNESS)
BEHAVIORAL (HEADACHE)
CARDIAC (EKG CHANGES NOT DIAGNOSTIC OF ABOVE)
LUNGS, THORAX OR RESPIRATION (CYANOSIS)
LUNGS, THORAX OR RESPIRATION (RESPIRATORY DEPRESSION)
GASTROINTESTINAL (CHANGES IN STRUCTURE OR FUNCTION OF SALIVARY GLANDS)
GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)
GASTROINTESTINAL (NAUSEA OR VOMITING)
GASTROINTESTINAL (OTHER CHANGES)
LIVER (OTHER CHANGES)
KIDNEY, URETER, BLADDER (OTHER CHANGES)
MUSCULO-SKELETAL (CHANGES IN TEETH AND SUPPORTING STRUCTURES)
MUSCULO-SKELETAL (OTHER CHANGES)
SKIN AND APPENDAGES (TUMORS)
IMMUNOLOGICAL INCLUDING ALLERGIC (INCREASED IMMUNE RESPONSE)
PATERNAL EFFECTS (SPERMATOGENESIS)
PATERNAL EFFECTS (TESTES, EPIDIDYMIS, SPERM DUCT)
EFFECTS ON FERTILITY (FEMALE FERTILITY INDEX)
EFFECTS ON FERTILITY (MALE FERTILITY INDEX)
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (OTHER MEASURES OF FERTILITY)
EFFECTS ON EMBRYO OR FETUS (EXTRA EMBRYONIC STRUCTURES)
EFFECTS ON EMBRYO OR FETUS (MATERNAL-FETAL EXCHANGE)
EFFECTS ON EMBRYO OR FETUS (FETAL DEATH)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CENTRAL NERVOUS SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (SKIN AND SKIN APPENDAGES)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
EFFECTS ON NEWBORN (STILLBIRTH)
EFFECTS ON NEWBORN (BEHAVIORAL)
NUTRITIONAL AND GROSS METABOLIC (WEIGHT LOSS OR DECREASED WEIGHT GAIN)
TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)
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.
DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A
CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
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
EC INDEX NO: 009-004-00-7

REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
ACGIH TLV-TWA 2.5 MG(F)/M3
ACGIH TLV-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN  DTLVS* TLV/BEI,1999
IARC CANCER REVIEW: HUMAN INADEQUATE EVIDENCE  DTLVS* TLV/BEI,1999
IARC CANCER REVIEW: ANIMAL INADEQUATE EVIDENCE  IMEMDT 27,237,1982
IARC CANCER REVIEW: GROUP 3  IMSUDL 7,208,1987
EPA PIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,1989

MSHA STANDARD-AIR:TWA 2.5 MG(F)/M3
DTLV* 3,116,1971
OSH A PEL (GEN INDU): 8H TWA 2.5 MG(F)/M3
CFRGR 29,1910.1000,1994
OSH A PEL (CONSTRUC): 8H TWA 2.5 MG(F)/M3
CFRGR 29,1926.55,1994
OSH A PEL (SHIPYARD): 8H TWA 2.5 MG(F)/M3
CFRGR 29,1915.1000,1993
OSH A 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: 2.5 MG(F)/M3, JAN1993
OEL-BELGIUM: 2.5 MG(F)/M3, JAN1993
OEL-FINLAND: 2.5 MG(F)/M3, JAN1999
OEL-FRANCE: VNE 2 MG/M3, JAN1993
OEL-FRANCE: VNE 2 MG(F)/M3, JAN1999
OEL-GERMANY: 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: TWA 0.2 MG/M3, STEL 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;

http://infonew.sigma-aldrich.com/cgi-bin/gx.cgi/Applogic+MSDSInfo.ReturnMSDS
12/12/02
OEI 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
NOMS 1974: HSD 84425; NIS 50; TNE 3763; NOS 50; TNE 25059
NOES 1983: HSD 84425; NIS 83; TNF 3970; NOS 69; TNE 84776; TFE 26602
EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER-WHOLE SEX CHROM.
LOSS
EPA GENETOX PROGRAM 1988, NEGATIVE: D MELANOGASTER-NONDISJUNCTION; N
crass-Aneuploidy
EPA GENETOX PROGRAM 1988, NEGATIVE: IN VIVO SCE-NONHUMAN; S Cerevisiae
Gene Conversion
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: D MELANOGASTER-PARTIAL SEX
CHROM. LOSS
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: HISTIDINE REVERSION-AMES TEST
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: D MELANOGASTER SEX-LINKED
LETHAL
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001
NTP CARCINOGENESIS STUDIES (ORAL): EQUIVOCAL EVIDENCE: RAT
NTP* NTP-TR-393,1991
NTP CARCINOGENESIS STUDIES (ORAL): NO EVIDENCE: MOUSE
NTP*NTP-TR-393,1990
SECTION 16. --- --- --- --- --- --- OTHER INFORMATION--- --- --- --- --- ---
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