

DATE: 07/11/97ACCT: 742982001INDEX: D71910998CAT NO: MHX06222PO NBR: P0085001

DOC-HX0619**VER-960322

MATERIAL SAFETY DATA SHEET

EM SCIENCE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: EM SCIENCE

PREPARATION DATE: 03/22/96

DATE MSDS PRINTED: AUG 01, 1996

EM SCIENCE

A DIVISION OF EM INDUSTRIES

INFORMATION PHONE NUMBER: 609-423-6300

P.O. BOX 70

HOURS: MON. TO FRI. 8:30-5

480 DEMOCRAT RD.

CHEMTREC EMERGENCY NUMBER: 800-424-9300

GIBBSTOWN, N.J. 08027

HOURS: 24 HRS A DAY

CATALOG NUMBER(S):

HX0619 HX0620 HX0621 HX0621U HX0622 HX0624

335

PRODUCT NAME:

HYDROFLUORIC ACID SOLUTION

SYNONYMS:

FLUORINE ACID

HYDROGEN FLUORIDE SOLUTION

CHEMICAL FAMILY:

INORGANIC ACID

FORMULA:

HF (40 TO 60% IN WATER)

MOLECULAR WEIGHT:

20.01

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS #	APPR %
HYDROFLUORIC ACID	7664-39-3	40-60%
WATER	7732-18-5	60-40%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

EXTREMELY HAZARDOUS LIQUID AND VAPOR.

CAUSES SEVERE BURNS WHICH MAY NOT BE IMMEDIATELY PAINFUL OR VISIBLE.

MAY BE FATAL IF INHALED OR SWALLOWED.

MAY CAUSE DAMAGE TO BONES.

APPEARANCE:

FUMING LIQUID, PUNGENT ODOR

COLORLESS.

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POTENTIAL HEALTH EFFECTS (ACUTE AND CHRONIC)

SYMPTOMS OF EXPOSURE:

TOXIC BY INGESTION, INHALATION AND SKIN ABSORPTION.

ONCE INGESTED, INHALED OR ABSORBED, IT WILL CAUSE SEVERE BURNS WHICH MAY NOT BE IMMEDIATELY PAINFUL OR VISIBLE.

WILL PENETRATE SKIN AND ATTACK UNDERLYING TISSUE AND BONE

INHALATION CAUSES PULMONARY EDEMA, DEATH.

CONTACT WITH EYE CAN CAUSE IMMEDIATE BLINDNESS.

MEDICAL COND. AGGRAVATED BY EXPOSURE:

DATA NOT AVAILABLE.

ROUTES OF ENTRY:

INHALATION, INGESTION OR SKIN CONTACT.

CARCINOGENICITY:

THE MATERIAL IS NOT LISTED (IARC, NTP, OSHA) AS CANCER CAUSING AGENT.

4. FIRST AID MEASURES

EMERGENCY FIRST AID:

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GET IMMEDIATE MEDICAL ASSISTANCE ESPECIALLY FOR INGESTION

EYES: IMMEDIATELY FLUSH THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES.

INHALATION: REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED.

SPILL: IMMEDIATELY FLUSH THOROUGHLY WITH LARGE AMOUNTS OF WATER.

SPRINKLE WITH SODIUM FLUORIDE GEL OR SOAK IN OR APPLY COLD SOLUTION OF BENZYL CALCIUM CHLORIDE OR MAGNESIUM SULFATE UNTIL MEDICAL ATTENTION IS OBTAINED.

INGESTION: DO NOT INDUCE VOMITING. IF CONSCIOUS GIVE LARGE QUANTITIES OF WATER, MILK, MILK OF MAGNESIA OR EGGS BEATEN WITH WATER.

5. FIRE FIGHTING MEASURES

FLASH POINT (F): NONCOMBUSTIBLE

FLAMMABLE LIMITS LEL (%): N/A

FLAMMABLE LIMITS UEL (%): N/A

EXTINGUISHING MEDIA:

USE ANY SUITABLE FOR ADJACENT MATERIAL.

FIRE FIGHTING PROCEDURES:

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

ALSO WEAR A FULL FACE SHIELD.

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FIRE & EXPLOSION HAZARDS:

PRESSURE BUILDUP MAY MAKE CLOSED CONTAINERS EXPLODE.

6. ACCIDENTAL RELEASE MEASURES

SPILL RESPONSE:

EVACUATE THE AREA OF ALL UNNECESSARY PERSONNEL.

WEAR SUITABLE PROTECTIVE EQUIPMENT LISTED UNDER EXPOSURE / PERSONAL PROTECTION.

ELIMINATE ANY IGNITION SOURCES UNTIL THE AREA IS DETERMINED TO BE FREE FROM EXPLOSION OR FIRE HAZARDS.

CONTAIN THE RELEASE AND ELIMINATE ITS SOURCE, IF THIS CAN BE DONE WITHOUT RISK.

TAKE UP AND CONTAINERIZE FOR PROPER DISPOSAL AS DESCRIBED UNDER DISPOSAL.

COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS ON REPORTING RELEASES, AND OTHER REGULATORY DATA.

QUANTITIES AND OTHER REGULATORY DATA.

EM SCIENCE RECOMMENDS SPILL-X NEUTRALIZERS AND ABSORBENT AGENTS FOR VARIOUS TYPES OF SPILLS.

ADDITIONAL INFORMATION ON THE SPILL-X PRODUCTS CAN BE PROVIDED THROUGH THE EM SCIENCE TECHNICAL SERVICE DEPARTMENT (609) 423-6300.

THE FOLLOWING EM SCIENCE SPILL-X NEUTRALIZER AND ABSORBENT IS RECOMMENDED FOR THIS PRODUCT:

SX0861

SPILL-X-A ACID SPILL TREATMENT KIT

7. HANDLING AND STORAGE

HANDLING & STORAGE:

KEEP CONTAINERS TIGHTLY CLOSED; STORE IN A COOL, WELL-VENTILATED AREA.

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

DO NOT BREATHE VAPOR.

RETAINED RESIDUE MAY MAKE EMPTY CONTAINERS HAZARDOUS; USE CAUTION!

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT:

VENTILATION, RESPIRATORY PROTECTION, PROTECTIVE CLOTHING, EYE PROTECTION

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LEVELS OF PRODUCT AIR SUPPLIED RESPIRATOR IS REQUIRED IN THE ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER

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NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING AND/OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

MATERIAL MUST BE HANDLED OR TRANSFERRED IN AN APPROVED FUME HOOD OR WITH EQUIVALENT VENTILATION.

PROTECTIVE GLOVES (NATURAL RUBBER, NEOPRENE, NITRILE, OR EQUIVALENT) MUST BE WORN TO PREVENT SKIN CONTACT.

EQUIVALENT CLOTHING (NATURAL RUBBER, NEOPRENE, NITRILE, OR EQUIVALENT) MUST BE WORN WHEN HANDLING THIS MATERIAL.

SAFETY GLASSES WITH SIDE SHIELDS MUST BE WORN AT ALL TIMES.

WORK / HYGIENIC PRACTICES:
WASH THOROUGHLY AFTER HANDLING.
DO NOT TAKE INTERNALLY.
EYE WASH AND SAFETY EQUIPMENT SHOULD BE READILY AVAILABLE.

EXPOSURE GUIDELINES

OSHA - PEL:	TWA	STEL	CL
COMPONENT	PPM	MG/M3	PPM
HYDROFLUORIC ACID	3	6	
WATER			

ACGIH - TLV:

COMPONENT	TWA	STEL	CL
MG/M3	PPM	MG/M3	PPM
HYDROFLUORIC ACID	3	2.6	3
WATER			2.6

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (C 760 MMHG): 108C

MELTING POINT (C): N/A

SPECIFIC GRAVITY (H2O = 1): 0.98

VAPOR PRESSURE (MM HG): 10

PERCENT VOLATILE BY VOL (%): 99+%

VAPOR DENSITY (AIR = 1): 0.7

EVAPORATION RATE (BUAC = 1): N/A

SOLUBILITY IN WATER (%): MISCIBLE

APPEARANCE: MSDS (CONTINUED) - HX0619 PAGE # 4

COLORLESS, FUMING LIQUID, PUNGENT ODOR

10. STABILITY AND REACTIVITY

STABILITY: YES

HAZARDOUS POLYMERIZATION: DOES NOT OCCUR

HAZARDOUS DECOMPOSITION: HYDROGEN, FLUORINE

CONDITIONS TO AVOID: REACTS VIOLENTLY WITH ACETIC ANHYDRIDE, ETHANOLAMINE, AMMONIA, CAO, ETHYLENEGLYCOL, ETHYLENEIMINE, PROPIOLACTONE, PROPYLENE OXIDE, VINYL ACETATE, SILICATES, P205, AS2O3

MATERIALS TO AVOID: WATER, ACIDS, BASES, CORROSIVES

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{ } OXIDIZERS
{ } OTHER :

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA:

IHL-HMN LCLO: 50 PPM/30M IPR-RAT LDLO: 25 MG/KG

IHL-MAN TCLO: 100 MG/CU.M./1M

TOXICOLOGICAL FINDINGS:
TESTS ON LABORATORY ANIMALS INDICATE MATERIAL MAY PRODUCE ADVERSE MUTAGENIC AND REPRODUCTIVE EFFECTS
CITED IN REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS)

12. DISPOSAL CONSIDERATIONS

EPA WASTE NUMBERS: U134 D002

SPECIFIED TECHNOLOGY - NEUTRALIZE TO PH 8-9. CONTACT YOUR LOCAL PERMITTED WASTE DISPOSAL SITE (TSD) FOR PERMISSIBLE TREATMENT SITES.

ALWAYS CONTACT A PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

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13. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME: HYDROFLUORIC ACID, SOLUTION

DOT ID NUMBER: UN1790

14. REGULATORY INFORMATION

TSCA STATEMENT:
THIS PRODUCT IS A "MIXTURE". THE CAS NUMBERS OF ALL COMPONENTS ARE LISTED ON THE TSCA INVENTORY.

COMPONENT	SARA EHS (302)	SARA EHS TPQ (LBS)	CERCLA RQ (LBS)
HYDROFLUORIC ACID	Y	100	100
WATER			

OSHA FLOOR LIST

COMPONENT	OSHA FLOOR LIST	SARA 313 (%)	DEMINIMIS FOR SARA 313 (%)
HYDROFLUORIC ACID	Y	Y	1.0
WATER			

15. OTHER INFORMATION

COMMENTS: NONE

NFPA HAZARD RATINGS:
HEALTH : 4
FLAMMABILITY : 0
REACTIVITY : 0
SPECIAL HAZARDS :

REVISION HISTORY:
07/01/83 02/01/85 09/15/86 03/29/89 10/27/89 03/01/91 05/03/93
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03/10/95
= REVISED SECTION
N/A = NOT AVAILABLE
N/E = NONE ESTABLISHED
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