



Curtin Matheson Scientific, Inc.
 9999 VETERANS MEMORIAL
 DOCK A
 HOUSTON, TX 77038

FISONS

MATERIAL SAFETY DATA SHEET

MAIL TO: SCHOOLCRAFT COLLEGE
 ATTN: GERI, PURCHASING
 HPS MEMBER
 18600 HAGGERTY RD.

LIVONIA, MI 48152-2696

SECTION 1 - NAME AND PRODUCT

MANUFACTURER NAME AND ADDRESS

EM SCIENCE
 A DIV OF EM INDUSTRIES
 P.O. BOX 70
 GIBBSTOWN NJ 08027
EMERGENCY PHONE 1-800-424-9300

CHEMICAL NUMBER: MHX0622-2

ITEM NUMBER: 0422304

VNDR CATLG NBR:

ENTRY DATE: 02-24-90

CHANGE DATE: 02-24-90

SPECIAL REQUEST

COMMON NAME (ON LABEL)

HYDROFLUORIC ACID SOLUTION

CHEMICAL FAMILY

INORGANIC ACID

TRADE NAME & SYNONYMS

HYDROFLUORIC ACID SOLUTION
 FLUORIC ACID, HYDROGEN FLUORIDE SOLUTION

CHEMICAL FORMULA

* FORMULA WEIGHT: 20.01 (ANHYDROUS)

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	CAS	% (WT)	TLV	PEL
HYDROFLUORIC ACID SOLUTION	7664-39-3	100.00	.000 SEC.5	.000 SEC.5

PEL: Permissible Exposure Limit established by the Occupational Safety and Health Administration (OSHA).

TLV: Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists, 1986-87.

OTHER INGREDIENT INFORMATION

NONE OTHER THAN SPECIFIED PRODUCT.

SECTION 3 - PHYSICAL DATA

BOILING POINT 108C	VOLATILE BY VOLUME (%) 99+	VAPOR PRESSURE 10 20C
MELTING POINT N/A	VAPOR DENSITY 0.7	SOLUBILITY IN WATER MISCIBLE
EVAPORATION RATE (N/A	= 1) SPECIFIC GRAVITY 0.98	

APPEARANCE AND ODOR
 COLORLESS, FUMING LIQUID, PUNGENT ODOR

OTHER PHYSICAL DATA
 MOLECULAR WEIGHT: 20.01 *

SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT

NONCOMBUSTIBLE

LOWER EXPLOSIVE LIMIT

N/A

UPPER EXPLOSIVE LIMIT

N/A

EXTINGUISHING MEDIA

EXTINGUISHING MEDIA..... ANY SUITABLE FOR ADJACENT MATERIAL

UNUSUAL FIRE AND EXPLOSION HAZARDS

FIRE & EXPL. HAZARDS.... PRESSURE BUILDUP MAY MAKE CLOSED CONTAINERS EXPLODE.

SPECIAL FIRE FIGHTING PROCEDURES

FIRE FIGHTING PROC..... WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING INCLUDING A FULL FACE SHIELD.

SECTION 5 - HEALTH HAZARD DATA

HEALTH HAZARDS (ACUTE & CHRONIC)

SEE SIGNS AND SYMPTOMS OF EXPOSURE.

PRIMARY ROUTES OF EXPOSURE

ROUTES OF ENTRY..... INHALATION, INGESTION OR SKIN CONTACT.

SIGNS AND SYMPTOMS OF EXPOSURE

SYMPTOMS OF EXPOSURE TOXIC BY

INGESTION, INHALATION AND SKIN ABSORPTION. ON CONTACT WITH ANY BODY TISSUE, CAUSES 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.

SECTION 5 - HEALTH HAZARD DATA (CONTINUED)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
MEDICAL COND. AGGRAVATED BY EXP. DATA NOT AVAILABLE.

CARCINOGENICITY

INDICATORS NOT GIVEN

NTP Yes No

IARC Yes No

OSHA Yes No

CARCINOGENICITY.....: THE
MATERIAL IS NOT LISTED AS A CANCER CAUSING AGENT.

EMERGENCY AND FIRST AID PROCEDURES

EMERGENCY FIRST AID.....: 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
SKIN: IMMEDIATELY FLUSH THOROUGHLY WITH LARGE AMOUNTS OF WATER; SOAK
IN OR APPLY COLD SOLUTION OF BENZALKONIUM 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.

THRESHOLD LIMITS / TOXICITY DATA

ACGIH TLV/OSHA PEL (TWA).....: (TLV) 3 PPM (CL)
(PEL) 3 PPM; STEL 6 PPM. TOXICITY DATA.....:
-IHL-HMN LCLO: 50 PPM/30M IPR-RAT LDLO: 25
MG/KG IHL-MAN TCLO: 100 MG/CU.M./1M

SECTION 6 - REACTIVITY DATA

STABILITY Unstable Stable

CONDITIONS TO AVOID

CONDITIONS TO AVOID: REACTS VIOLENTLY WITH ACETIC ANHYDRIDE,
ETHANOLAMINE, AMMONIA, CAO, ETHYLENEDIAMINE, ETHYLENEIMINE, PROPIOLACTONE, PROPYLENE
OXIDE, VINYL ACETATE, SILICATES, P205, AS203.

INCOMPATIBILITY (MATERIALS TO AVOID)

MATERIALS TO AVOID.....: () WATER (X) ACIDS (X) BASES ()
) CORROSIVES () OXIDIZERS () OTHER..

SECTION 6 - REACTIVITY DATA (CONTINUED)

HAZARDOUS DECOMPOSITION OR BYPRODUCTS
 HAZARDOUS DECOMPOSITION.: HYDROGEN, FLUORINE

HAZARDOUS POLYMERIZATION May Occur Will Not Occur
CONDITIONS TO AVOID
 HAZARDOUS POLYMERIZATION.: DOES NOT OCCUR

SECTION 7 - SPILL, LEAK, AND DISPOSAL PROCEDURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

SPILL RESPONSE: WEAR
 SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING INCLUDING A FULL FACE SHIELD.
 CONTAIN IF POSSIBLE, DILUTE WITH AN EXCESS OF
 WATER, AND NEUTRALIZE WITH A LIME SLURRY, LIMESTONE, SODA ASH OR OTHER ALKALINE MATERIAL.
 TAKE UP AND CONTAINERIZE FOR PROPER DISPOSAL.

WASTE DISPOSAL METHOD

WASTE DISPOSAL: TO BE PERFORMED IN COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND
 FEDERAL REGULATIONS.

SECTION 8 - SPECIAL PROTECTION INFORMATION**RESPIRATORY PROTECTION**

VENTILATION, RESPIRATORY PROTECTION, PROTECTIVE CLOTHING, EYE PROTECTION: -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
 PROTECTIVE 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 NIOSH/MSHA-APPROVED RESPIRATOR SHOULD BE WORN IN
 THE ABSENCE OF ADEQUATE VENTILATION

LOCAL VENTILATION

SEE SECTION 8 - RESPIRATORY PROTECTION

MECHANICAL VENTILATION

SEE SECTION 8 - RESPIRATORY PROTECTION

SPECIAL VENTILATION

SEE SECTION 8 - RESPIRATORY PROTECTION

SECTION 8 - SPECIAL PROTECTION INFORMATION (CONTINUED)**OTHER VENTILATION**

SEE SECTION 8 - RESPIRATORY PROTECTION

PROTECTIVE GLOVES

SEE SECTION 8 - RESPIRATORY PROTECTION

EYE PROTECTION

SEE SECTION 8 - RESPIRATORY PROTECTION

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

SEE SECTION 8 - RESPIRATORY PROTECTION.

SECTION 9 - SPECIAL PRECAUTIONS**PRECAUTIONS TO BE TAKEN IN 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!

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

SECTION 10 - OTHER INFORMATION**MISCELLANEOUS INFO.**

PREPARATION DATE: MAR 29, '89 INFORMATION PHONE

NUMBER : (609) 354-9200

HEALTH: 4 FLAMMABILITY: 0

REACTIVITY : 0 SPECIAL HAZARDS:

DOT SHIPPING NAME: HYDROFLUORIC ACID SOLUTION, DOT

NUMBER.....: UN1790 N/A = NOT AVAILABLE.

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