Harcros Chemicals Inc  
Kansas City, Kansas  

MATERIAL SAFETY DATA SHEET  Page 1  

| PRODUCT NAME       | HYDROFLUOSILICIC ACID 23% | Date: 7-MAY-2002 08:45:22.30  
| PRODUCT CODE       | 03777                     | 150# POLY DR |  
| CAS #              | 016961834                 | MSDS No. 000605 |  
| FORMULA            | H2SiF6                    | Revision No./Date 03 930512 |  
| CHEM. FAMILY:      | inorganic acids           | Detail Number 00275/02 |  
| CHEMICAL NAME AND SYNONYMS: | Hydrofluosilicic Acid, 20-30% |  
|                    | Fluosilicic Acid;         |  
|                    | Hexafluosilicic Acid;     |  
|                    | MSDS 000605 DETAIL 00275  |  

SUPPLIERS NAME : Harcros Chemicals Inc.  
5200 Speaker Road  
Kansas City KS 66106-1095  

SUPPLIERS PHONE NUMBER : 913-321-3131  
TRANSPORTATION EMERGENCY PHONE NUMBER : 1-800-424-9300  

S.A.E.A INFORMATION  
HAZARDS : Acute Chronic  
PHYSICAL DATA : Pure Liquid  

SECTION I HAZARDOUS INGREDIENTS  

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>MAX % W/W</th>
<th>SARA APPLIES</th>
<th>TWA/TLV (ppm)</th>
<th>STEL (ppm)</th>
<th>CONTAMINANT LEVELS</th>
<th>CEIL (ppm)</th>
<th>SKIN AGENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrofluosilicic Acid</td>
<td>30.0</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>As Fluorine TWA/TLV 2.5 mg/m3</td>
<td>OSHA/ACGIH</td>
<td></td>
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<tr>
<td>(CAS # 16961-81-4 )</td>
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</tbody>
</table>

SECTION II HEALTH HAZARDS  

POSSIBLE EFFECTS OF EXPOSURE EYES  
Eye contact with product may cause severe irritation severe burns irreversible damage blindness Effects may be delayed.  

SKIN  
Skin contact may cause burning sensation pain severe burns tissue destruction skin damage  

Continued On Page 2
May be absorbed in harmful amounts.
Absorption thru skin may cause symptoms described under inhalation and ingestion. Effects may be delayed.

INHALATION
Inhalation may cause severe irritation coughing choking chest pain bronchitis burns tissue ulceration excess fluid retention (pulmonary edema) lung damage, damage to respiratory system lowered calcium level in the blood (hypocalcemia) coma even death Effects may be delayed.

INGESTION
Ingestion may cause nausea vomiting diarrhea burns tissue ulceration gastrointestinal damage lowered calcium level in the blood (hypocalcemia) coma even death Effects may be delayed.

TARGET ORGANS
OVEREXPOSURE MAY CAUSE DAMAGE TO, bones teeth respiratory system blood kidneys liver

FIRST AID

FIRST AID EYES
Immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids apart to ensure flushing of entire surface. Call a physician.

FIRST AID SKIN
Immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse. Call a physician.

FIRST AID INHALATION
Remove to fresh air. If not breathing give artificial respiration, preferably mouth to mouth. If breathing is difficult give oxygen. Call a physician.

FIRST AID INGESTION
Do not induce vomiting. Rinse mouth with water. Dilute stomach contents by drinking water. If vomiting occurs spontaneously, keep head below hips to prevent breathing vomit into lungs. Call a physician immediately.

OTHER INFORMATION

ROUTES OF ENTRY
eye contact skin contact skin absorption inhalation

OVEREXPOSURE MAY AGGRAVATE DISORDERS OF THE eyes skin respiratory system

SECTION III SPECIAL PROTECTION

PROTECTIVE EQUIPMENT

PROTECTIVE EQUIPMENT EYES
faceshield safety glasses

PROTECTIVE EQUIPMENT SKIN
Always wear eye protection when working with chemicals.

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Kansas City, Kansas

MATERIAL SAFETY DATA SHEET Page 3

PRODUCT NAME: HYDROFLUOSILICIC ACID 23% Date: 7-MAY-2002 08:45:23.10
PRODUCT CODE: 09777 150# POLY DR

SECTION III SPECIAL PROTECTION

(CONTINUED)

impervious gloves acid proof clothing rubber boots rubber apron

PROTECTIVE EQUIPMENT INHALATION

If exposure limits are exceeded, or if exposure may occur, use a NIOSH/MSHA respirator approved
for your conditions of exposure. Refer to the most recent NIOSH publications concerning chemical
hazards, or consult your safety equipment supplier. Respiratory protection programs must be in
compliance with OSHA requirements in 29 CFR 1910.134. For emergencies a NIOSH/MSHA approved
positive pressure breathing apparatus should be readily available.

VENTILATION REQUIRED:
Adequate ventilation is required to minimize exposure or to maintain exposure levels below
OSHA/ACGIH requirements.

ADDITIONAL PROTECTIVE MEASURES
Safety shower, eye wash fountain, and washing facilities should be readily available.

SECTION IV FIRE & EXPLOSION HAZARD DATA

Flash Point (METHOD): > OR = N/A
Flammable Limits (% Volume in Air) UPPR: N/D Lower: N/D

HMIS Info
Health : 3
Fire : 0
React : 0
Special : X

EXTINGUISHING MEDIA
media appropriate for surrounding fire

FIRE FIGHTING PROCEDURES
Prevent human exposure to fire, fumes, smoke, and products of combustion. Evacuate non
essential personnel. Firefighters should wear full face, self contained breathing apparatus and
impervious protective clothing. Use water to cool containers exposed to fire.

UNUSUAL FIRE & EXPLOSION HAZARDS
Toxic fumes may be released.

SECTION V PHYSICAL DATA

Boiling Point: > OR = 222 deg. F
Freezing Point: 16 deg. F
Specific Gravity (H(2)O=1): 1.1700 to 1.2700 @ 68 deg. F
Vapor Pressure (MM HG.): > OR = 24.000 @ 77 deg. F
Vapor Density (AIR=1) : N/D
Evaporation Rate (NA =1): N/D

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Kansas City, Kansas

MATERIAL SAFETY DATA SHEET Page 4

Date: 7-MAY-2002 08:45:23.43

PRODUCT NAME: HYDROFLUOSILICIC ACID 23%
PRODUCT CODE: 09777
15O# POLY DR

SECTION V PHYSICAL DATA

Solubility in Water: COMPLETE
Percent Volatile by Volume: N/D
pH: aqueous approx. > OR = 1.220
Appearance: COLORED LIQUID
Odor: SHARP

SECTION VI REACTIVITY DATA

STABILITY
Stable
INCOMPATIBILITY
metal/metal blends inorganic acids organic bases
with some metals can generate explosive hydrogen gas.
HAZARDOUS DECOMPOSITION PRODUCTS
hydrogen fluoride
HAZARDOUS POLYMERIZATION
Will not occur

SECTION VII SPILL AND LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Evacuate non essential personnel, eliminate ignition sources, and wear protective equipment (See Section III). Shut off source of leak only if safe to do so. Contain spill. Recover free product. To clean up residue, flush sparingly with water or use an absorbent. Avoid runoff to ground water, surface waters, and sewars. It may be necessary to remove contaminated soil. If product is flammable or combustible, use non sparking tools. If acidity (low pH) is a problem, neutralize with hydrated lime, soda ash, or sodium bicarbonate. If alkalinity (high pH) is a problem neutralize with dilute acetic acid or dilute hydrochloric (muriatic) acid. If required, notify state and local authorities.

DISPOSAL METHOD
Avoid discharge to sewers or waterways. Solids must be disposed of in a permitted waste management facility. Recovered liquids may be reprocessed or incinerated. Incineration must be handled in a permitted hazardous waste management facility. Dispose of material in accordance with all Federal, State and local regulations. Local regulations may be more stringent than Federal or State.

SECTION VIII

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Kansas City, Kansas

MATERIAL SAFETY DATA SHEET Page 5

PRODUCT NAME: HYDROFLUOSILICIC ACID 23% 150# POLY DR
PRODUCT CODE: 05777

Date: 7-MAY-2002 08:45:23.78

SECTION VII SPILL AND LEAK PROCEDURES
Proper Shipping Name: FLUOSILICIC ACID
Hazard Class: 8, UN1778, PGII
Label Requirements: CORROSIVE
Reportable Quantity: None

(Continued)

SECTION IX ADDITIONAL INFORMATION

PRECAUTIONS
Wear protective equipment when handling. Use only with adequate ventilation. Wash thoroughly after handling. Do Not breathe vapor, mist, or dust. Do Not get in eyes, on skin, or clothing. Do not swallow.

HANDLING
Do not use glass containers. For industrial use only. ATTENTION: This container hazardous when emptied. Since emptied container contains product residues (vapor or liquid), all labeled hazard precautions must be observed.

STORAGE
Keep container closed when not in use. Store in a cool dry place. Keep out of reach of children. Do not use glass containers.

SECTION X COMPLIANCE INFORMATION

NSF INFORMATION
MAXIMUM USE LEVEL IN POTABLE WATER:
For 23% Hydrofluosilicic Acid (23% Fluosilicic Acid): 6 mg/L.

NAME: GENE TURNER

DATE ISSUED: 930512
DATE REVISED: 930512
N/A = NOT APPLICABLE
N/D = NOT DETERMINED
N/E = NOT ESTABLISHED
UNX = UNKNOWN

< = LESS THAN
> = MORE THAN

The information provided in this Material Safety data sheet has been obtained from sources believed to be reliable. Harcros Chemicals Inc provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. Harcros Chemicals Inc knows of no medical condition, other than those noted on this material safety data sheet, which are generally recognized as being aggravated by exposure to this product.