



**CITY OF TRAVERSE CITY**  
 400 BOARDMAN AVE. - TRAVERSE CITY, MI 49684  
 231-922-4440

5435

THE ABOVE NUMBER  
 MUST APPEAR ON YOUR  
 INVOICE, PACKAGES, ALL  
 SHIPPING PAPERS AND  
 CORRESPONDENCE.

STANDARD

BLANKET

CONFIRMING

**IMPORTANT  
 SHIP TO:**

CITY OF TRAVERSE CITY (WATER TREATMENT PLANT)  
 2010 EASTERN AVENUE  
 TRAVERSE CITY MI 49686

TO: KEY CHEMICAL  
 9000 HUBBELL AVENUE  
 DETROIT MI 48228

**PURCHASE ORDER**

**CONTRACT**

**SERVICE ORDER\***

\*IF THIS IS A SERVICE  
 ORDER OR CONTRACT,  
 REFER TO THE PROVISIONS  
 ON THE REVERSE SIDE.  
 Dept #: 570

Requested By: ART KRUEGER (231-922-4920)

ORDER DATE	REQUISITION	TERMS	SHIPPING INSTRUCTIONS	DATE REQUIRED
7/17/2013	5531	NET 30 DAY	FOB DESTIN	ASAP

QUAN.	UNIT	DESCRIPTION	UNIT PRICE	AMOUNT
		<b>VENDORS ARE REQUIRED TO PRODUCE IN TRIPLICATE MATERIAL SAFETY DATA SHEETS FOR ALL PRODUCTS WHEN APPLICABLE.</b>		
1	SVC	CITY TO CALL ON AN AS-NEEDED BASIS FOR APPROXIMATELY 38 TONS OF HYDROFLUOSILICIC ACID DELIVERED FREIGHT ON BOARD DESTINATION TO THE CITY WATER TREATMENT PLANT AT 2010 EASTERN AVENUE, TRAVERSE CITY MI, DURING FISCAL YEAR 7/1/2013 THROUGH 6/30/2014 PER BID SPECIFICATIONS AS APPROVED BY THE CITY COMMISSION ON JUNE 17, 2013. CERTIFICATE OF INSURANCE IS CURRENT UNTIL AUGUST 1, 2013, AND ON FILE. PAYMENTS WILL ONLY BE ISSUED FOR GOODS ACTUALLY RECEIVED UPON RECEIPT OF A VALID INVOICE APPROVED BY THE CITY.	21,957.54	21,957.54
		591-570-74000	Total:	21,957.54

**SALES TAX EXEMPT - GOVERNMENT**

*[Signature]*  
 AUTHORIZED SIGNATURE

7-17-13  
 DATE

**INSTRUCTION TO VENDOR: SEND ALL INVOICES TO CITY TREASURER**

400 Boardman Ave., Traverse City, MI 49684. Purchase Order No. and Department name must be shown on all documents. A separate invoice must be submitted for each Purchase Order. Cash discount date will begin with receipt of invoice or goods, whichever is later.

MORE THAN \$7,000 CITY COMMISSION APPROVAL REQUIRED

WHITE - VENDOR - YELLOW - ATTACH TO INVOICE - PINK - PURCHASING DEPT - GOLDENROD - DEPARTMENT COPY

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The City of Traverse City

Office of the City Manager

GOVERNMENTAL CENTER  
400 Boardman Avenue  
Traverse City, MI 49684  
(231) 922-4440  
(231) 922-4476 Fax



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April 1, 2013

Bidder:

The City of Traverse City will receive **sealed bids** in the Office of the City Manager, second floor, Governmental Center, 400 Boardman Avenue, Traverse City, Michigan, 49684, until **Wednesday, May 15, 2013 at 2:00 PM** for the following:

Approximately 7,400 gallons (38 tons) of 23% Hydrofluosilicic Acid  
for the Water Treatment Plant  
(specifications attached)

If the specifications are obtained from the City's website at [www.traverscitymi.gov](http://www.traverscitymi.gov) (services) it is the sole responsibility of the Bidder to check the website for updates and addendums prior to the bid being submitted. You may also register on the website to receive notifications when requests for proposals or bids, updates and addendums are posted.

The City of Traverse City reserves the right to accept or reject any or all bids, waive irregularities, and to accept the bids either on an entire or individual basis that is in the best interest of the City.

The City accepts no responsibility for any expense incurred by the bidder in the preparation and presentation of a bid. Such expenses shall be borne exclusively by the bidder.

Only the successful bidder will be notified. If you so desire, you may call for results.

You must indicate on the outside of the sealed envelope that the bid is for the "**Hydrofluosilicic Acid Bid.**"

**You must submit the bid to the City Manager's Office prior to the above-indicated time and date or the bid will not be accepted. Telefaxed or E-Mail bids will not be accepted.**

Please note that if you have previously submitted an informal quote, you will still need to submit a sealed bid prior to the date and time specified above in order to be considered. Please ensure that all requirements listed in the specifications are met.

If you have any questions, please contact Art Krueger, Water Treatment Plant Superintendent, at (231) 922-4920 before the bid is submitted.

PLEASE SUBMIT BID TO: Julie Dalton, Purchasing Agent  
City Manager's Office, Governmental Center  
Second Floor, 400 Boardman Avenue  
Traverse City, MI 49684

## SPECIFICATIONS

**ITEM:** HYDROFLUOSILICIC ACID – APPROXIMATELY 7,400 GALONS (38 TONS) OF 23% HYDROFLUOSILICIC ACID

Price of delivered acid shall show actual percent available and adjusted by the following formula:

$$\frac{\text{Price/ton} \times \text{Actual \% acid}}{23\%}$$

Price quote is to include the price of the acid delivered to the Water Treatment Plant, 2010 Eastern Avenue, F.O.B., Traverse City, MI. Because of limited storage capacity, the Water Plant will only accept shipments of 3,700 gallon maximum loads. Shipments of 3,700 gallons are to be made as required and as released by the Water Department. The acid must be delivered by a tank truck, bulk shipment and capable of being pumped up to bulk storage tanks on the second floor of the Water Treatment Plant. The timeframe for delivery will be July 1, 2013 - June 30, 2014. **Please be advised that 7,400 gallons is an estimate of the product that will be needed for the year. An additional shipment of 3,700 gallons may be required as determined by the Water Treatment Plant Superintendent.**

Proposal to state terms.

**BIDDERS ARE TO INCLUDE WITH THEIR BIDS CURRENT MATERIAL SAFETY DATA SHEETS AND AN AFFIDAVIT OF COMPLIANCE ATTESTING THE SUPPLIED CHEMICAL COMPLIES WITH NSF STANDARD 60.**

**Questions are to be directed to Art Krueger, Water Treatment Plant Superintendent, (231) 922-4920.**

Bidder - Please complete and return

**BID SUMMARY**

**TITLE: APPROXIMATELY 7,400 GALLONS (38 TONS) OF 23%  
HYUDROFLUOSILICIC ACID**  
**DUE DATE: MAY 15, 2013 @ 2:00 p.m.**

Having carefully examined the attached specifications and any other applicable information, the undersigned proposes to furnish all items necessary for and reasonably incidental to the proper completion of this bid. Vendor submits this bid and agrees to meet or exceed all requirements and specifications unless otherwise indicated in writing and attached hereto.

Bidder certifies that as of the date of this bid the Company or he/she is not in arrears to the City of Traverse City for debt or contract and is in no way a defaulter as provided in Section 152, Chapter XVI of the Charter of the City of Traverse City.

Bidder understands and agrees, if selected as the successful Bidder, to accept a purchase/service order and to provide proof of the required insurance.

The Bidder shall comply with all applicable federal, state, local and building codes, laws, rules and regulations and obtain any required permits for this work.

The Bidder certifies that it is in compliance with the City's Nondiscrimination Policy as set forth in Administrative Order No. 47 and Chapter 605 of the City's Codified Ordinances.

The Bidder certifies that none of the following circumstances have occurred with respect to the Bidder, an officer of the Bidder, or an owner of a 25% or more share in the Bidder's business, within 3 years prior to the bid:

- (a) conviction of a criminal offense incident to the application for or performance of a contract;
- (b) conviction of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense which currently, seriously and directly reflects on the Bidder's business integrity;
- (c) conviction under state or federal antitrust statutes;
- (d) attempting to influence a public employee to breach ethical conduct standards; or
- (e) conviction of a criminal offense or other violation of other state, local, or federal law, as determined by a court of competent jurisdiction or an administrative proceeding, which in the opinion of the City indicates that the bidder is unable to perform responsibility or which reflects a lack of integrity that could negatively impact or reflect upon the City of Traverse City, including but not limited to, any of the following offenses or violations of:
  - i. The Natural Resources and Environmental Protection Act.
  - ii. A persistent and knowing violation of the Michigan Consumer Protection Act.

iii. Willful or persistent violations of the Michigan Occupational Health and Safety Act.

iv. A violation of federal, local, or state civil rights, equal rights, or non-discrimination laws, rules, or regulations.

v. Repeated or flagrant violations of laws related to the payment of wages and fringe benefits.

(f) the loss of a license or the right to do business or practice a profession, the loss or suspension of which indicates dishonesty, a lack of integrity, or a failure or refusal to perform in accordance with the ethical standards of the business or profession in question

Bidder understands that the City reserves the right to accept any or all bids in whole or part and to waive irregularities in any bid in the best interest of the City. The bid will be evaluated and awarded on the basis of the best value to the City. The criteria used by the City may include, but will not be limited to: ability, qualifications, timeframe, experience, price, type and amount of equipment, accessories, options, insurance, permits, licenses, other pertinent factors and overall capability to meet the needs of the City. The City is sales tax exempt – Government.

Bidder agrees that the bid may not be withdrawn for a period of sixty (60) days from the actual date of the opening of the bid.

Item Name: HYDROFLUOROSILICIC ACID

Cost: \$ \$577.83 Per TON, 23% BASIS

Delivery Lead Time: 3-5 DAYS

Other Terms: NET 30 DAYS

**Bidder: Important! Attach material safety data sheets and affidavit mentioned in the specifications.**

Submitted by: [Signature]  
Signature

Steve Norris, CEO  
Name and Title (Print)

704 843-9873  
Phone Fax

704 973-9281

Key Chemical, Inc.  
9503 Dovewood Place  
Company Name Waxhaw, NC 28173

Company Address

City, State, Zip

Corporation  
Sole proprietorship/partnership/corporation

De  
If corporation, state of corporation



Key Chemical is a supplier of commodity and specialty chemicals used in the water and wastewater treatment industry. We supply railcars, truckloads, drums and bags of many chemicals, such as Caustic Soda, Sodium Bisulfite, Potassium Permanganate, Sulfuric Acid, etc. We supply distributors and end users that are looking for competitive pricing from a reliable quality-driven supplier.

Key Chemical is a Woman Owned Small Business based in Waxhaw, NC who has successfully completed registration in North Carolina as a Historically Underutilized Business. Key Chemical supplies Hydrofluorosilicic Acid to the Southeastern U.S. from our terminal network which includes Wilmington NC, Savannah, GA, Baltimore MD and Jacksonville FL. We look forward to being a reliable supplier.

### **Key Chemical Municipal Customer References:**

1. Detroit Water and Sewerage - Hydrofluorosilicic Acid  
Lake Huron Plant  
3993 Metcalf Rd.  
Fort Gratiot, MI 48059  
Ulysses Freeman 810-385-2024 [freeman@dwsd.org](mailto:freeman@dwsd.org)
2. City of Atlanta, GA- Hydrofluorosilicic Acid  
650 17<sup>th</sup> street, NW  
Atlanta, GA 30318  
Contact: Quinton Fletcher 404-992-2086 [quinton.fletcher@atlwater.com](mailto:quinton.fletcher@atlwater.com)
3. Kannapolis City Water Treatment Plant - Hydrofluorosilicic Acid  
1303 Pump Station Road  
Kannapolis, NC 28082  
John Erikson 704-932-3904
4. City of Raleigh  
2315 Benson Rd.  
Garner, NC 27527  
Contact: Jeremy Ennis 919-996-3215 [jeremy.ennis@raleighnc.gov](mailto:jeremy.ennis@raleighnc.gov)
5. DeKalb County  
4830 winters Chapel Rd.  
Doraville, GA 30360  
Contact: Mac Mattox 770-391-6046 [mwmattox@dekalbcountyga.gov](mailto:mwmattox@dekalbcountyga.gov)

Please contact Jack Smith, if you have any further questions (704) 843-9873.

Best Regards,

Jack Smith  
Key Chemical, Inc.  
President  
[jsmith@keychemicalinc.com](mailto:jsmith@keychemicalinc.com)



## HYDROFLUOROSILICIC ACID

### SALES SPECIFICATION

#### Chemical Analysis

	Specification	Typical
Assay (H <sub>2</sub> SiF <sub>6</sub> )	23.00% ± 3%	23.0%
Fluorine (F)	18.22% ± 1.5%	19.0%
Heavy Metals as Lead (Pb)	0.02% max	0.0002%
Hydrofluoric Acid (HF)	Less than 1.00%	nil

#### Physical Properties

Description	Water white to straw yellow solution, meeting both the AWWA Standard B703a-97 and the NSF/ANSI Standard 60 for Fluorosilicic Acid.
Color	Straw Yellow shall be determined as material with a maximum of 200 units (APHA) in accordance with method 2120B, visual comparison method.
Specific Gravity	1.234 (H <sub>2</sub> O = 1) for 25% @ 60°F
Boiling Point for 25%	222.5°F
Freezing Point for 25%	4°F (-15.5°C)
Molecular Weight	144.08
Weight per Gallon for 25%	10.29 lbs./gal

Rev 9/1/2009

*The information herein is believed to be reliable and is to assist customers in determining whether our products are suitable for their applications. However, no warranty, express or implied is made as to its accuracy or completeness and none is made as to fitness of this material for any purpose. Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute any other warranty express or implied, including any warranty of merchantability or fitness nor of protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special, incidental or consequential damages. We shall not be liable for damages to person or property resulting from its use. Consult the Material Safety Data Sheet for additional information.*

Rev 9/1/2009

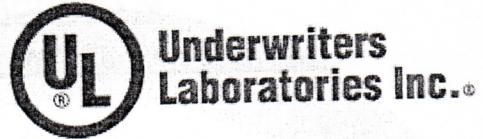
Key Chemical, Inc.  
Phone (704) 843-9873

9503 Dovewood Place  
Quality • Service • Commitment

Waxhaw, NC 28173  
Fax (704) 973-9281

# Certificate of Compliance

Certificate Number 20110118 – MH47618-25246  
Report Reference MH47618, 2010 February 01  
Issue Date 2011 January 18



*Issued to:* **KEY CHEMICAL INC**  
9503 DOVEWOOD PL  
WAXHAW, NC 28173 USA

*This is to certify that representative samples of*

## Drinking Water Treatment Chemicals

Model Descriptions: Hydrofluosilicic Acid 20-25% (Fluosilicic Acid).

*Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.*

*Standard(s) for Safety:*

The basic standard used to investigate products in this category is ANSI/NSF 60-2009, "Drinking Water Treatment Chemicals - Health Effects."


*Additional Information:*

Marking:

Bakersville, NC

Product	Maximum Use Level, mg/L
Hydrofluosilicic Acid 20-25%	6.0

Only those products bearing the UL Classification Mark should be considered as being covered by UL's Classification and Follow-Up Service.

The UL Classification Mark includes: UL in a circle symbol:  with the word "CLASSIFIED" (as shown); a control number (may be alphanumeric) assigned by UL; a statement to indicate the extent of UL's evaluation of the product; and, the product category name (product identity) as indicated in the appropriate UL Directory.

Look for the UL Classification Mark on the product

**William R. Carney**  
Director, North American Certification Programs

Underwriters Laboratories Inc.  
Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

For questions, please contact a local UL Customer Service Representative at <http://www.ul.com/global/eng/pages/corporate/contactus/>





## **Hydrofluorosilicic Acid 23%**

### **Affidavit of Compliance with NSF / AWWA Current Standard**

To Whom It May Concern:

This letter certifies that the Hydrofluorosilicic Acid furnished by Key Chemical will meet or exceed all of your required specifications (AWWA B703, NSF 60).

Attached is a UL (an ANSI Accredited Agency) certification attesting that our product meets current AWWA/NSF standards.

**Please note our material is manufactured in the USA.**

Key Chemical is a strong supplier to the water treatment industry. We look forward to being a reliable supplier bringing you quality products when you need them.

Best Regards,  
KEY CHEMICAL, INC.

A handwritten signature in black ink, appearing to read "Steven V. Norris".

Steven V. Norris  
President



# MATERIAL SAFETY DATA SHEET FLUOROSILICIC ACID

## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Key Chemical, Inc  
9503 Dovewood Place  
Waxhaw, NC 28173

EMERGENCY TELEPHONE NO.:  
Chemtel 800-255-3924

TRADE NAME:  
Hydrofluorosilicic Acid  
CHEMICAL NAME:  
Fluorosilicic Acid

IDENTIFICATION NUMBER:  
UN 1778  
SYNONYMS:  
Fluorosilicic Acid, HFS

## 2. INGREDIENTS

<u>Component</u>	<u>CAS #</u>	<u>Percent</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>Units</u>
Water	7732-18-5	70-80	Not Est.	Not Est.	Not Est.
Fluorosilicic Acid	16961-83-1	20-30	2.5 (As F-)	2.5 (As F-)	mg/M <sup>3</sup>
Hydrogen Fluoride	7664-39-3	0-1	3 (C)	3 6 (STEL)	ppm ppm

ACGIH TLVs are based on 1997 values. OSHA PELs are based on the more stringent 1987 values, which were subsequently vacated by the courts. All values are 8-hour time-weighted averages unless otherwise noted. (C) represents a ceiling exposure limit that should not be exceeded at any time. (STEL) represents Short Term Exposure Limit - normally 15 minutes.

## HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Product is a clear liquid with a pungent, sour, penetrating odor. Liquid may cause severe irritation and chemical burns of the eyes, skin, mucous membranes, and respiratory tract. Development of hydrofluoric acid burns may take up to 12 hours after exposure. Wear appropriate personal protective equipment. Keep individuals not involved in the clean-up out of the area. Prevent spread of release by diking with earth, sand, or other non-reactive materials. Prevent entry into storm or sanitary sewers, ground water, or soil. Releases may be reportable to local, state, and/or federal authorities. Absorb releases material with a sorbent suitable for acidic materials or pump into appropriate containers for disposal. After clean up, slowly neutralize residual materials with a weakly basic media, preferably ground or powdered limestone. All materials collected during clean-up operations may be contaminated and should be treated as hazardous unless specific testing, including TCLP, shows the collected material to be non-hazardous.

### POTENTIAL HEALTH EFFECTS:

Eye:	May cause severe irritation and chemical burns of the eyes. Hydrofluoric acid burns may not become evident for up to 12 hours after exposure.
Skin Contact:	May cause severe irritation and chemical burns of the skin. Hydrofluoric acid burns may not become evident for up to 12 hours after exposure.
Skin Absorption:	Not known to be absorbed through the intact skin.
Ingestion:	MAY BE FATAL IF LARGE AMOUNTS ARE INGESTED. May cause abdominal pain diarrhea, vomiting, excess salivation, and painful spasms of the limbs.
Inhalation:	May cause severe irritation and chemical burns of the mucous membranes and respiratory tract.

Chronic and Carcinogenicity: Prolonged exposure may cause dermatitis. The product has not been identified as a carcinogen or potential carcinogen. Pre-existing skin, lung, central nervous system, and kidney conditions may be aggravated by exposure to the components of the product. Exposure to fluorides at concentrations well above the TLV or PEL may cause a chronic bony fluorosis. See Section 11.

## 4. FIRST AID MEASURES

Inhalation:	Remove exposed person to fresh air. If breathing is difficult, oxygen may be administered. If breathing has stopped, artificial respiration should be started immediately. Seek medical attention.
Eyes:	Flush with tepid water for at least 20 minutes holding the eyelids wide open. Seek medical attention immediately .
Skin:	Wash thoroughly with mild soap and water. Seek medical attention immediately and advise medical personnel of possible hydrogen fluoride exposure. Remove any contaminated clothing and launder thoroughly before reuse.

## 4. FIRST AID MEASURES - Continued

Ingestion: SEEK MEDICAL ATTENTION IMMEDIATELY. Give water to dilute. Do not induce vomiting unless directed by licensed medical personnel. Advise medical personnel of possible fluoride and hydrogen fluoride exposure. Never give anything by mouth to an unconscious individual.

## 5. FIRE FIGHTING MEASURES

Flash Point: NA                      LEL: NA                      UEL: NA                      Auto Ign. Temp.: NA

Product will not ignite. Material in or near fires should be cooled with a water spray or fog if compatible with fire fighting techniques for the other materials involved in the fire. A self-contained breathing apparatus operating in the positive pressure mode and full fire fighting gear should be worn for combating fires. Water used to fight fires should be contained. See Section 12.

## 6. ACCIDENTAL RELEASE MEASURES

Prevent spread of release by diking with earth, sand, or other non-reactive materials. Absorb releases with a sorbent suitable for acidic materials or pump into appropriate containers for disposal. After initial clean up, slowly neutralize the release area with a weakly basic media, preferably ground or powdered limestone. Appropriate personal protective equipment cited in Section 8 should be worn during all clean-up operations. All materials collected during clean-up operations may be contaminated and should be treated as hazardous unless specific testing, including TCLP, shows the collected material to be non-hazardous. Releases may be reportable to local, state, and/or federal authorities. See Sections 12 & 15.

## 7. HANDLING AND STORAGE

Do not store in metal containers or with or near incompatible materials cited in Section 10. Store in tightly closed containers out of contact with the elements. Appropriate personal protective equipment cited in Section 8 should be worn during handling. Good housekeeping and engineering practices should be employed to prevent spills of the product in the workplace. Any spills should be cleaned up as soon as possible to minimize the possibility of contact. See Section 6. Wash hands and face thoroughly before eating, drinking or smoking.

## 8. EXPOSURE CONTROL - PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation should be provided to maintain exposures below the limits cited in Section 2. Design details for local exhaust ventilation systems may be found in the latest edition of "Industrial Ventilation: A Manual of Recommended Practice" published by the ACGIH Committee on Industrial Ventilation, P.O. Box 16153, Lansing, MI, 48910. The need for local exhaust ventilation should be evaluated by a professional industrial hygienist. Local exhaust ventilation systems should be designed by a professional engineer.

Respiratory Protection: If exposures may exceed the limits cited in Section 2, use, as a minimum, a NIOSH approved 1/2 face-piece respirator with cartridges approved for acid gases, hydrogen fluoride. If exposures exceed 10 times the limits cited in Section 2, consult your respiratory protection equipment supplier or a professional industrial hygienist for selection of the proper equipment. The evaluation of the need for respiratory protection should be made by a professional industrial hygienist.

## 8. EXPOSURE CONTROL - PERSONAL PROTECTION - Continued

Eye Protection: Chemical protective goggles are recommended where there is the possibility of eye contact with the product. Safety glasses with side-shields are recommended for all other operations.

Protective Gloves: Polymeric gloves are recommended to prevent possible chemical burns. Butyl rubber is recommended.

General: A butyl coated apron or other body covering is recommended where regular work clothing may become contaminated with the product. All soiled or dirty clothing and personal protective equipment should be thoroughly cleaned before reuse.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND PHYSICAL STATE: Clear to Yellow Liquid	OCTANOL/WATER PARTITION COEFFICIENT: NA
VAPOR DENSITY (AIR =1): 1-2	MELT POINT: 1.4 to 4° F
VAPOR PRESSURE: 24 mm Hg at 77° F (25% concentration)	EVAPORATION RATE (BUTYL ACETATE = 1): NA
ODOR: Pungent, sour, Penetrating	SPECIFIC GRAVITY/BULK DENSITY: 1.17 g/cc (25% concentration)
% VOLATILE BY VOLUME: 70 - 90 %	BOILING POINT: 225° F
% SOLUBILITY (H <sub>2</sub> O): 100	pH: 1.5 - 2 (10% concentration)

## 10. STABILITY AND REACTIVITY

Stability & Polymerization: Product is stable. Hazardous polymerization will not occur.

Incompatibility (Conditions to Avoid): Do not store in metal or glass containers, with or near strong acids, reducing agents, organics, glass, concrete, leather, natural rubber, or metals. Fluorosilicic acid can react with many metals to liberate hydrogen gas which is highly flammable. May react with strong mineral acids to liberate hydrogen fluoride or hydrofluoric acid which are highly toxic and corrosive.

Hazardous Decomposition Products: Toxic and corrosive fluoride gases.

Special Sensitivity: None that are known.

## 11. TOXICOLOGICAL INFORMATION

The acute lethal oral toxicity in rats for fluorosilicic acid is approximately 35 mg per kilogram of body weight. Based on the fluorosilicic acid content, this is equivalent to approximately 9 grams for the average human. Hydrofluoric acid burns form dilute solutions may not become evident for up to 12 hours after exposure. They are characterized by intense pain and burning at the site of contact. Appropriate medical treatment to neutralize the causative agent is the only way to alleviate the pain and burning. Chronic bony fluorosis is a very rare condition and is not expected to develop if exposures are maintained below mandated or recommended exposure limits.

## 12. ECOLOGICAL INFORMATION

Fluorides can be highly toxic to aquatic and terrestrial flora and fauna. Care should be taken to prevent the product from entering the environment.

## 13. DISPOSAL CONSIDERATIONS

Product is defined as a Corrosive Hazardous Waste (D002). It should be disposed of in accordance with all applicable local, state, and/or federal regulations. If used or waste product is disposed of, testing, including TCLP, should be conducted to determine hazard characteristics. Empty containers will contain product residues. Do not use for any purpose other than to store product.

## 14. TRANSPORTATION INFORMATION

DOT Shipping Description:	Fluorosilicic Acid, 8, UN 1778, PGII
Label:	Corrosive
Restrictions:	Passenger Aircraft = 1L; Cargo Only Aircraft = 30 L

## 15. REGULATORY INFORMATION

The hydrogen fluoride component of the product is reportable under Section 313 of the Superfund Amendments and Reauthorization Act of 1986.

OSHA Hazard Communication Categories: Irritant, Lung Hazard, Skin Hazard, Kidney Hazard

SARA Hazard Categories: Acute Hazard, Chronic Hazard

The Reportable Quantity (RQ) for releases of hydrogen fluoride to the environment is 100 pounds.

Hydrogen fluoride has been listed as a Special Health Hazard Substance by the State of New Jersey.

All components of the product are included in the Toxic Substances Control Act (TSCA) inventory.

## 16. OTHER INFORMATION

Not Est. = Not Established; NA = Not Applicable; ND = Not Determined

Preparation /Revision Date: 10/01/2009

Reason for Revision: Review information and convert to ANSI Z400.1 format

## 16. OTHER INFORMATION - Continued

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IMPORTANT SAFETY NOTICE

The information contained in the Material Safety Data Sheet relates only to the specific material(s) described herein and does not relate to use in combination with any other material or substance or in any process. We believe that the information contained herein is current as of the date of issue of this Material Safety Data Sheet. *Because the use of this information and these opinions and the conditions of use of this product are not within the control of Key Chemical, it is the user's obligation to determine the conditions of safe use of the product.*

**Users of this product should study this Material Safety Data Sheet and become aware of the product hazards and safety information before using the product. Users should also notify their employees, agents, and contractors regarding information contained in this Material Safety Data Sheet and any product hazards and safety information in order to provide safe use of this product.**

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