

COPY

PVS

INVITATION TO BID

ITB No. 4336

WATER TREATMENT PLANT CHEMICAL BID
HYDROFLUOSILICIC ACID (H_2SiF_6)



Due Date: Thursday, May 1, 2014 at 10:00 a.m.

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

a davis
angela davis
Angela Zapoli
a3apoli@pvschemical.com
313 925-0300

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ADVERTISEMENT
FOR THE
WATER TREATMENT CHEMICAL BID
HYDROFLUOSILICIC ACID (H₂SiF₆)
ITB NO. 4336

Sealed Bids will be received by the City of Ann Arbor Procurement Unit, 301 East Huron Street, Fifth Floor, Larcom City Hall, on or before Thursday, May 1, 2014 by 10:00 AM for the chemical Hydrofluosilicic Acid (H₂SiF₆) for use by the City's Water Treatment System. Bids will be publically opened and read aloud at this time.

Hydrofluosilicic Acid must be supplied to the City Water Treatment Plan, fob destination, freight prepaid. The selected bidder will be responsible for transferring the product from the transport vehicle to the City storage vessel.

Bid documents, plans, specifications, and addenda shall be downloaded by Bidders at either of the following websites: Michigan Inter-governmental Trade Network (MITN) www.mitn.info or City of Ann Arbor Purchasing website: www.A2gov.org. It is the Bidder's responsibility to verify they have obtained all information before submitting a bid.

Each bidder shall provide the City of Ann Arbor with a complete copy of the U. S. Department of Occupational Safety & Health Administration, Material Safety Data Sheets, (form OSHA-20) for each product bid.

A Bid, once submitted, becomes the property of the City. In the sole discretion of the City, the City reserves the right to allow a bidder to reclaim submitted documents provided the documents are requested and retrieved no later than 48 hours prior to the scheduled bid opening.

Precondition for entering into a Contract with the City of Ann Arbor is compliance with Chapter 112 of Title IX of the Code of the City of Ann Arbor. Further information is outlined in the Contract Documents.

After the time of opening, no Bid may be withdrawn for a period of 60 days. The City reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

Any further information on bid documents may be obtained from the Procurement Office, (734) 794-6500.

CITY OF ANN ARBOR PROCUREMENT UNIT

Section 1 INSTRUCTIONS TO BIDDERS

General

The City is soliciting bids for Hydrofluosilicic Acid (H_2SiF_6). Chemical specifications are included in Section 2

Any Bid which does not conform fully to these instructions may be rejected.

Site Inspection

Prior to Wednesday, April 30, 2014, a bidder may inspect the City's site and equipment. Inspections are by appointment only during business hours (8:00 a.m. to 3:00 p.m). Appointments can be scheduled by email to Larry Sanford, Assistant Manager, Water Treatment Unit at LSanford@a2gov.org. No appointments will be scheduled after April 30, 2014

Preparation of Bids

Bids should be prepared providing a straight-forward, concise description of the Bidder's ability to meet the requirements of the ITB. Bids shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed and dated in ink by the person signing the Bid.

Bids must be submitted on the "Bid Forms" provided with each blank properly filled in. If forms are not fully completed it may disqualify the bid.

Each person signing the Bid certifies that he/she is the person in the Bidder's firm/organization responsible for the decision as to the fees being offered in the Bid and has not and will not participated in any action contrary to the terms of this provision.

Questions or Clarification on ITB Specifications

All questions regarding this ITB shall be submitted via email. Emailed questions and inquires will be accepted from any and all prospective Bidders in accordance with the terms and conditions of the ITB.

All questions shall be submitted by April 29, 2014 and should be addressed as follows:
Specification/Scope of Work questions emailed to Larry Sanford, Asst. Mgr, Water Treatment Services Unit at LSanford@a2gov.org

Bid Process and HR Compliance questions emailed to Mark Berryman, Purchasing Manager at mberryman@a2gov.org.

Addenda

If it becomes necessary to revise any part of the ITB, notice of the Addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or City of Ann Arbor web site www.A2gov.org for all parties to download.

Each Bidder must in its Bid, to avoid any miscommunications, acknowledge all addenda which it has received, but the failure of a Bidder to receive, or acknowledge receipt of, any addenda shall not relieve the Bidder of the responsibility for complying with the terms thereof.

The City will not be bound by oral responses to inquiries or written responses other than written addenda.

Bid Submission

All Bids are due and must be delivered to the City of Ann Arbor Procurement Unit on or before Thursday, May 1, 2014 by 10:00 AM. Bids submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each Bidder must submit one (1) original Bid and one (1) additional Bid copies in a sealed envelope clearly marked: **ITB No. 4336 – Water Treatment Chemical – Hydrofluosilicic Acid**

Bids must be addressed and delivered to:

City of Ann Arbor
Procurement Unit,
c/o Customer Service, 1st Floor
301 East Huron Street
P.O. Box 8647
Ann Arbor, MI 48107

All Bids received on or before the Due Date will be publicly opened and recorded immediately. No immediate decisions are rendered.

Hand delivered Bids will be date/time stamped/signed by the Procurement Unit at the address above in order to be considered. Normal business hours are 9:00 a.m. to 3:00 p.m. Monday through Friday, excluding Holidays. The City will not be liable to any Bidder for any unforeseen circumstances, delivery or postal delays. Postmarking to the Due Date will not substitute for receipt of the Bid. Each Bidder is responsible for submission of their Bid.

Additional time for submission of bids past the stated due date and time will not be granted to a single Bidder; however, additional time may be granted to all Bidders when the City determines in its sole discretion that circumstances warrant it.

Award

The City intends to award a Contract(s) to the lowest responsible Bidder(s). For unit price bids, the contract will be awarded based upon the unit prices and the lump sum prices stated by the bidder. If the City determines that the unit price for any item is materially different for the work item bid than either other bidders or the general market, the City, in its sole discretion, in addition to any other right it may have, may reject the bid as not responsible or non-conforming.

The City intends to issue a purchase order to the selected Bidder. The City Purchase Order terms and conditions have been included with the Bid as an appendix. The contract term is to start approximately July 1, 2014 and continue through June 30, 2015 (twelve-month period). The City reserves the right to renew the contract with the selected Bidder for up to three (3) one-year periods provided that by sixty (60) days prior to the end of the original contract term or renewal term (as applicable) written notice of the City's exercise of its extension rights is provided to the Vendor. Extension to be under the same terms and conditions.

Official Documents

The City of Ann Arbor officially distributes bid documents from the Procurement Unit or through the Michigan Intergovernmental Trade Network (MITN). Copies of the bid documents obtained from any other source are not Official copies. Addenda and other bid information will only be posted to these official distribution sites. If you obtained City of Ann Arbor Bid documents from other sources, it is recommended that you register on www.MITN.info and obtain an official Bid.

Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of 60 days specified in the Advertisement. Bid Pricing must be firm through August 30, 2014

Human Rights Information

To establish compliance with City Ordinance, the Bidder should complete and return with its bid completed copies of the Human Rights Division Contract Compliance Forms or an acceptable equivalent. In the event Human Rights forms are not submitted with bid, the Bidder will have 24 hours to provide once requested by the City.

Disclosures

After bids are opened, all information in a submitter's bid is subjected to disclosure under the provisions of Michigan Public Act No. 442 of 1976, as amended (MCL 15.231 et seq.) known as the "Freedom of Information Act." The Freedom of Information Act also provides for the complete disclosure of contracts and attachments thereto except where specifically exempted.

Bid Protest

All Bid protests must be in writing and filed with the Purchasing Agent within five (5) business days of the award action. The Bidder must clearly state the reasons for the protest. If a Bidder contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the Bidder to the Purchasing Agent. The Purchasing Agent will provide the Bidder with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee whose decision shall be final.

Reservation of Rights

The City of Ann Arbor reserves the right to accept any bid or alternative bid proposed in whole or in part, to reject any or all bids or alternatives bids in whole or in part and to waive irregularity and/or informalities in any bid and to make the award in any manner deemed in the best interest of the City.

Section 2
CITY OF ANN ARBOR
STANDARD SPECIFICATIONS
FOR
HYDROFLUOROSILICIC ACID

This standard pertains to Hydrofluorosilicic acid a.k.a. Fluorosilicic acid (H_2SiF_6 or HFS) for use in the treatment of municipal water supplies. This standard meets or exceeds the requirements of ANSI/AWWA B703-00.

PART 1: General Information

Part 1.1 Definitions

The following definitions shall apply in this standard:

Manufacturer: Any party that produces hydrofluorosilicic acid as covered by this standard.

Purchaser: Any party that enters into a contract, either written or verbal, to purchase hydrofluorosilicic acid in accordance with the provisions of this standard.

Vendor: Any party that enters into a contract, either written or verbal, to supply hydrofluorosilicic acid for purchase in accordance with this standard.

Part 1.2 Affidavit of Compliance

The purchaser requires: (1) an affidavit from the vendor that the hydrofluorosilicic acid furnished under the purchaser's orders meets or exceeds the specifications of this standard; (2) an affidavit affirming that the HFS conforms to ANSI/NSF Standard 60; (3) a certified analysis of the fluorosilicic acid including hydrofluoric acid (HF), lead (Pb), arsenic (As) and mercury (Hg).

Part 1.3 Rejection

Notice of Nonconformance. If the hydrofluorosilicic acid does not meet the requirements of this standard, a notice of nonconformance shall be provided by the purchaser to the vendor within 10 working days of receipt of the shipment at its point of destination. The results of the purchaser's test shall prevail unless the vendor notifies the purchaser within five working days of receipt of the notice of nonconformance that a retest is desired. On receipt of the request for a retest, the purchaser shall forward to the vendor one of the sealed samples taken in accordance to section 3.2 of this standard. In the event that the retest results do not agree with the test results of the purchaser, the other sealed sample shall be forwarded to a referee laboratory agreed

upon by both parties for analysis. The results of the referee laboratory's analysis shall be considered final. If the shipment is found to be in compliance with this standard, then the cost of the referee laboratory shall be assumed by the purchaser. If the shipment is found not to meet the specifications of this standard, the cost of the referee laboratory shall be assumed by the vendor.

If the material delivered is found to not meet the requirements of this standard, the responsibility of removal from the point of destination shall fall wholly on the vendor. An exception to this point may be made if a price adjustment is made between the vendor and the purchaser.

PART 2: Specifications

Part 2.1 Description

Hydrofluorosilicic acid is an aqueous solution of H_2SiF_6 , water white to straw yellow in color. It is a corrosive acid, irritating to the skin, and has a pungent odor. A 25% solution has a pH of 1.2 and weighs 10.1 lbs/gal. Hydrofluorosilicic acid is fed by metering pump into drinking water as a means to reduce the amount of dental carries.

Part 2.2 Physical Requirements

Hydrofluorosilicic acid supplied according to this standard shall be clean and free of visible suspended matter. It shall be water white to straw yellow. Straw yellow shall be determined as material with a maximum of 100 units in accordance with method 2120B, visual comparison method (Standard Methods for the Examination of Water and Wastewater).

Part 2.3 Chemical Requirements

The hydrofluorosilicic acid supplied under this standard shall contain between 23 and 30 percent fluorosilicic acid by weight.

Part 2.4 Impurities

The hydrofluorosilicic acid supplied according to this standard shall contain no mineral or organic substances in quantities capable of producing deleterious or injurious effects on the health of those consuming water that has been properly treated with hydrofluorosilicic acid.

The hydrofluorosilicic acid supplied according to this standard shall contain a maximum of 1 percent hydrofluoric acid and shall not contain more than 0.020 percent by weight of heavy metals expressed as lead (Pb).

Hydrofluorosilicic acid is a direct additive used in the treatment of potable water. This material shall be certified as suitable for contact with or treatment of drinking water by an accredited certification organization in accordance with ANSI/NSF Standard 60,

Drinking Water Treatment Chemicals-Health Effects. Evaluation shall be performed in accordance with requirements that are no less restrictive than those listed in ANSI/NSF Standard 60. Certification shall be performed by a certification organization accredited by the American National Standards Institute.

Part 3: Marking, Sampling and Shipping

Part 3.1 Marking

Each shipment shall contain clear identification of the material and a warning of potential danger in handling, and shall bear other markings as are required by applicable laws. The warning label should include suggestions for immediately rinsing away all acid coming in contact with the skin and the thorough dilution of acid accidentally spilled, including neutralization of the acid with lime.

The bill of lading or accompanying paperwork shall have marked on it the name of the acid, the name and address of the supplier or manufacturer, the lot number and the brand name if any.

Part 3.2 Sampling

Samples shall be taken at the point of destination, in accordance to AWWA B703-00.

Part 3.3 Shipping

Shipping of all fluorosilicic acid solutions shall conform to all applicable local, state and federal (including US Department of Transportation [USDOT] and Michigan Department of Transportation [MDOT]) regulations and applicable interstate regulations.

Tank truck shipments shall be accompanied by certified weight tickets.

PART 4: Testing Procedures

All testing shall be done in accordance to the most current and applicable AWWA standard for sodium silicofluoride. The following is a partial list of chemical and physical characteristics that may be tested:

- 1. Fluoride content.**
- 2. Heavy metals; especially Pb, Hg, As.**
- 3. HF content**

SECTION 3: INSURANCE

Effective the date of this Agreement, and continuing without interruption during the term of this Agreement, Contractor shall provide certificates of insurance to the City on behalf of itself, and when requested any subcontractor(s).

A. The certificates of insurance shall meet the following minimum requirements.

1. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident

Bodily Injury by Disease - \$500,000 each employee

Bodily Injury by Disease - \$500,000 each policy limit

2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, or Pollution. Limited Pollution endorsement is allowed if Broadened Pollution Liability Coverage is included in the Motor Vehicle Liability Insurance. Further, the following minimum limits of liability are required:

\$1,000,000	Each occurrence as respect Bodily Injury Liability
or	
	Property Damage Liability, or both combined
\$2,000,000	Per Job General Aggregate
\$1,000,000	Personal and Advertising Injury

3. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined. Pollution Liability – Broadened Coverage Required
4. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability,

Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

- B. Insurance required under A.2 and A.3 above of this contract shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.
- C. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this contract, the Contractor shall deliver proof of renewal and/or new policies to the Administering Service Area/Unit at least ten days prior to the expiration date.

ADDENDUM #1
ITB 4336- Water Treatment Plant Chemical Bid, Hydrofluosilicic Acid
City of Ann Arbor
Due: Thursday, May 1, 2014 by 10:00 a.m.

The following changes, additions, and/or deletions shall be made to the Invitation to Bid **Water Treatment Plant Chemical Bid, Hydrofluosilicic Acid** which bids will be received on or before 10:00 A.M. Thursday, May 1, 2014.

The information contained herein shall take precedence over the original documents and is appended thereto. This Addendum includes 1page. The changes listed below are identified by page number within the bid document. **The Contractor is to acknowledge receipt of this Addendum No. 1 on page P-1 of the Bid Documents prior to submitting its Bid.**

1. Replace the bid form, pages 13 Titled Section 4: Bid Form with the document below and attached.

Addendum 1: REVISION, April 18, 2014

SECTION 4: BID FORM

All Bidders shall submit pricing in the format requested

HYDROFLUOSILICIC ACID BULK	\$ <u>485.00</u>	TON
FREIGHT	\$ <u>incl.</u>	TON
TOTAL DELIVERED COST	\$ <u>485.00</u>	TON

INVOICE TERMS: Discount of 0% or \$ 0 will be allowed for payment of invoice thirty (30) days from day of delivery and acceptance.

OTHER TERMS: Less than 30 days, E.O.M., Proximo, etc., will not be considered in determining award of contract.

Hydrofluosilicic Acid shall be supplied to the City of Ann Arbor Water Treatment Plant, f.o.b. destination, freight prepaid. Contractor shall be responsible for transferring the product from transport vehicle to the City of Ann Arbor storage vessel. Bidder shall specify minimum shipping amount if any:

Minimum 45,000 # Shipments

* Discount of 1% if paid in 10 days

QUANTITY: The annual quantity is approximately **70 tons**. This quantity is for estimating purposes only, not a guarantee of actual usage. Product will be ordered on an "as needed" basis. All prices are to remain firm.

MONITORING: The successful Provider may provide a telemetry device(s) for tank monitoring that provides data to the Provider on tank level, so that ordering product is unnecessary and resupply is managed by the supplier according to the needs of the Water Treatment Plant. This device (these devices) will be at no cost to the City of Ann Arbor.

Bidder:

DVS Nolwood
10900 Harper Avenue
Detroit, MI 48213

Phone: (800) 284-9735
Fax: (313) 571-2225

Date: 5/1/14

X A. Davis, Bid Coordinator
Angela Davis

- The Supplier should include in their bid an appropriate index or indices and the weighting to be applied to each. The Supplier should include the Series ID number with their bid and include their proposed revision formula.
- The Supplier will adjust the price semiannually, on January 20 and July 20 (if the renewal extensions are exercised or the contract is multiyear). The bid price (base selling price) must be in effect for at least 6 months before the first price adjustment.
- The Base Selling Price will be the amount bid by the Supplier.
- The Base Period Factor, denoted with a subscripted zero (in the example: E_0 and D_0), shall consist of an average of the most recent finalized indices for a period of one year, immediately preceding the date of the approved City Council resolution for the product being purchased, for that particular representative index. For monthly published indices this will be the arithmetic average of the twelve most recently published finalized indices. For quarterly published indices this will be the arithmetic average of the four most recently published finalized indices.
- The Adjustment Factor, denoted with no subscript (in the example: E and D), shall be based upon an average of the six most recently published monthly indices, (or three most recently published quarterly indices) at the time of the revision, for that particular index. For timeliness, if any monthly or quarterly index is still preliminary (designated with a P in the published numbers) at the time of the revision, it will be used in its preliminary state.
- Should the index referenced cease to be published or is published in an alternate form (different Series Number, Base Date, or Period), a mutually agreed upon and similar index will be used for future adjustments.
- When Base Dates are revised by the BLS, rebasing shall be done as needed based upon the old and new reference base period.
- The US Bureau of Labor Statistics Producers Price indices can be found at www.bls.gov/ppi
- The Revision Formula is: $P = P_0[r/100(X/X_0) + s/100(Y/Y_0) + t/100(Z/Z_0) + \dots]$
Where
- P_0 = Base Selling Price or original bid price as per the Bid Documents.
- P = Revised product price for the new future six month period.
 X_0 = Base Period Factor for a selected index.
 X = Adjustment Factor for the same index.
 $r + s + t + \dots = 100$ = weighted proportion of selected index in revision formula

Following is an example of a revision formula. The parameters are defined below.

$$P = P_0 \times [0.70 (E/E_0) + 0.30 (D/D_0)]$$

Product Price

P_0 = Base Selling Price or original bid price as per the Bid Documents

P = Revised product price for the new future six month period.

Electric Power

E_0 = Base Period Factor for Electric Power Distribution – East North Central

E = Adjustment Factor for Electric Power Distribution – East North Central
PPI Monthly Index - Series ID: PCU221122221122433, Not Seasonally
Adjusted, Base Date: 9012

Diesel

D_0 = Base Period Factor for #2 Diesel Fuel

D = Adjustment Factor for #2 Diesel Fuel PPI Monthly Index - Series ID:
WPU057303, Not Seasonally Adjusted, Base Date: 8200

City of Ann Arbor Procurement Office

**INSTRUCTIONS FOR CONTRACTORS
FOR COMPLETING CONTRACT COMPLIANCE FORM**

City Policy

The "non discrimination in contracts" provision of the City Code, (Chapter 112, Section 9:161) requires contractors/vendors/grantees doing business with the City not to discriminate on the basis of actual or perceived race, color, religion, national origin, sex, age, condition of pregnancy, marital status, physical or mental limitations, source of income, family responsibilities, educational association, sexual orientation, gender identity or HIV status against any of their employees, any City employee working with them, or any applicant for employment. It also requires that the contractors/vendors/grantees include a similar provision in all subcontracts that they execute for City work or programs.

This Ordinance further requires that each prospective contractor/vendor submit employment data to the City showing current total employee breakdown by occupation, race and gender. This allows the Human Rights Office to determine whether or not the contractor/vendor has a workforce that is reflective of the availability of women and under-represented minorities within the contractor's labor recruitment area (the area where they can reasonably be expected to recruit employees). ***This data is provided to the City on the Human Rights Contract Compliance Forms (attached).***

To complete the form:

1) If a company has more than one location, then that company must complete 2 versions of the form.

- **Form #1** should contain the employment data for the **entire corporation**.
- **Form #2** should contain the employment data for those employees:
 - who will be working on-site;
 - in the office responsible for completing the contract; or,
 - in the case of non-profit grantees, those employees working on the project funded by the City grant(s).

2) If the company has only one location, fill out Form #1 only.

3) Complete all data in the upper section of the form including the name of the person who completes the form and the name of the company/organization's president.

4) Complete the Employment Data in the remainder of the form. Please be sure to complete all columns including the Total Columns on the far right side of the form, and the Total row and Previous Year Total row at the bottom of the form.

5) Return the completed form(s) to your contact in the City Department for whom you will be conducting the work.

For assistance in completing the form, contact:

Procurement Office of the City of Ann Arbor
734/794-6500

If a contractor is determined to be out of compliance, the Procurement Office will work with them to assist them in coming into compliance.

CITY OF ANN ARBOR PROCUREMENT OFFICE
HUMAN RIGHTS CONTRACT COMPLIANCE FORM
Entire Organization (Totals for All Locations where applicable)

Form #1

Name of Company/Organization PVS NOIWOOD Date Form Completed 4/30/14
Name and Title of Person Completing this Form Angela Davis Name of President Tim Nicholson
Address 10900 Harper Detroit MI 48213 County Wayne Phone # 800-284-9735
(Street address) (City) (State) (Zip) (Area Code)
Fax (313) 571-2225 Email Address adavis@pvschemicals.com
(Area Code)

EMPLOYMENT DATA

Number of Employees (Report employees in only one category)													
Job Categories	Male						Female						
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	TOTAL COLUMNS A-L
	A	B	C	D	E	F	G	H	I	J	K	L	
Exec/Sr. Level Officials	9			1			3						13
Supervisors													
Professionals	1						1						2
Technicians	1						1						2
Sales	10						7						17
Admin. Support	5						17						22
Craftspeople													
Operatives	21	3											24
Service Workers	1												1
Laborers/Helper	21	4											25
Apprentices													
Other													
TOTAL	69	7		1			29						100
PREVIOUS YEAR TOTAL													

**CITY OF ANN ARBOR PROCUREMENT OFFICE
HUMAN RIGHTS CONTRACT COMPLIANCE FORM**
Local Office (Only those employees that will do local or on-site work, if applicable)

Form #2

Name of Company/Organization _____ Date Form Completed _____

Name and Title of Person Completing this Form _____ Name of President _____

Address _____ (Street address) (City) (State) (Zip) County _____ Phone # _____ (Area Code)

Fax# _____ (Area Code) Email Address _____

EMPLOYMENT DATA

Number of Employees (Report employees in only one category)													
Job Categories	Male						Female						TOTAL COLUMNS A-L
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaskan Native	
	A	B	C	D	E	F	G	H	I	J	K	L	
Exec/Sr. Level Officials													
Supervisors													
Professionals													
Technicians													
Sales													
Admin. Support													
Craftspeople													
Operatives													
Service Workers													
Laborers/Helper													
Apprentices													
Other													
TOTAL													
PREVIOUS YEAR TOTAL													

1/12

Questions about this form? Call Procurement Office: (734) 794-6576

AAF-2

City of Ann Arbor: General Terms and Conditions

The following General Terms and Conditions shall apply to all purchases by or on behalf of the City of Ann Arbor unless specifically provided otherwise on the front of this Document:

Tax Exemption: The City of Ann Arbor is tax exempt, ID# 38-6004534.

Acceptance of Contract: This order is the City's contract to purchase the goods and services described on the reverse front side of this document from the Vendor. The City's placement of this order is expressly conditioned upon the Vendor's acceptance of all the terms and conditions of purchase contained on or attached to this purchase order. All specifications, drawings, and data submitted to the Vendor with this order are hereby incorporated and made part hereof.

Amendments: No agreement or understanding to modify this contract shall be binding upon the City unless in writing and signed by the City's authorized agent.

Delivery: All prices must be F.O.B. delivery point. Time is of the essence on this contract. If delivery dates cannot be met, the Vendor agrees to advise the City, in writing of the earliest possible shipping date. The City reserves the right to cancel or purchase elsewhere and hold the Vendor accountable.

Risk of Loss: Regardless of F.O.B. point, the Vendor agrees to bear all risk of loss, injury, or destruction of goods and materials ordered herein which may for any reason occur prior to delivery or acceptance by the City, whichever is later. No such loss, injury, or destruction shall release the Vendor from any obligations hereunder.

Inspection: Goods and materials must be properly packaged. Damaged goods and materials will not be accepted. The City reserves the right to inspect the goods at a reasonable time subsequent to delivery where circumstances or conditions prevent effective inspection of the goods at the time of delivery. All rejected goods shall be returned to the Vendor at no cost to the City, whether the damage is readily apparent at the time of delivery or later. The City's acceptance is conditioned on such inspection.

Patents and Copyrights: If an article sold and delivered to the City hereunder shall be protected by any applicable patent or copyright, the Vendor agrees to indemnify and save harmless the City, from and against any and all suits, claims, judgments, and costs instituted or recovered against it by any person whomsoever on account of the use or sale of such articles by the City in violation or right under such patent or copyright.

Uniform Commercial Code: All applicable portions of the Michigan Uniform Commercial Code shall govern contracts for goods with the City of Ann Arbor, except as modified by contract documents.

Non-waiver of Rights: No failure of either party to exercise any power given to it hereunder or to insist upon strict compliance by the other party with its obligations hereunder, and no custom or practice of the parties at variance with the terms hereof, nor any payment under this agreement shall constitute a waiver of either party's right to demand exact compliance with the terms hereof.

Material Safety Data Sheets: Applicable Material Safety Data Sheets, in compliance with OSHA/MIOSHA hazard communication regulations/standards, must be provided by the Vendor to the City at the time of purchase.

Assignments: The Vendor agrees not to assign or transfer this contract or any part thereof without the written consent of the City of Ann Arbor, acting through its authorized representative. Any unauthorized assignment may subject the contractor to immediate termination.

Laws Governing: This contract shall be governed by and construed according to the laws of the State of Michigan. Vendor agrees to submit to the jurisdiction and venue of the Circuit Court of Washtenaw County, MI, or if original jurisdiction is established, the U.S. District Ct. for Eastern District of MI, Southern Division. The Vendor stipulates venues referenced are convenient and waives any claim of non-convenience.

Prevailing Wage: It shall be the responsibility of the Vendor to comply, when applicable, with the prevailing wage requirements and/or the Davis-Bacon Act as amended.

Living Wage: It shall be the responsibility of the Vendor to comply, when applicable, with the City of Ann Arbor's Living Wage Ordinance as defined in Chapter 23, Section 1:811-1:821.

Non-Discrimination: It shall be the responsibility of the Vendor to comply, when applicable, with, all State, Federal and Local non-discrimination laws, including MCL 37.2209 and City Ordinance Chapter 112, Section 9:161.

Indemnification: To the fullest extent permitted by law the Vendor shall indemnify, defend and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result from any act or omission, associated with the performance of this contract by the Vendor or anyone acting on the Vendor's behalf under this contract. The Vendor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence. This indemnity survives delivery and acceptance of the Vendor's goods and services.

Warranty: The Vendor warrants to the City that all goods and services furnished hereunder will conform in all respects to the terms of this contract, including any drawings, specifications and standards incorporated herein. In addition, the Vendor warrants the goods and services are suitable for and will perform in accordance with the purposes for which they were intended.

Payment Terms: The City of Ann Arbor's payment terms are net 30. The payment date will be calculated based on the invoice receipt date or delivery date, whichever is later.

Payments: All invoices for goods and services shall be emailed to accountspayable@a2gov.org. Mailed invoices shall be addressed to the City of Ann Arbor, Accounts Payable, P.O. Box 8647, Ann Arbor, MI 48107, as indicated on the front of this purchase order. Invoices must include the Vendor's name, phone number, and clearly listed item descriptions, quantities and units of measure. The Vendor acknowledges and understands that invoices not addressed as stated above shall have the net 30 begin once the invoice is received by Accounts Payable.

Compliance with Laws: The Vendor certifies that in performing this contract it will comply with all applicable provisions of Federal, State and Local laws, regulations, rules and orders.

Termination for Cause: In the event the Vendor fails, at any time, to

SAFETY DATA SHEET

North American Version

FLUOROSILICIC ACID, 23-25%

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Identification of the substance or preparation

Product name : FLUOROSILICIC ACID, 23-25%
Synonyms : Fluorosilicic Acid, Fluosilicic Acid, Hydrofluorosilicic Acid
Molecular formula : H₂SiF₆

1.2. Use of the Substance/Preparation

Recommended use : - Chemical intermediate
- Water treatment

1.3. Company/Undertaking Identification

Address : SOLVAY FLUORIDES, LLC
3333 RICHMOND AVENUE
HOUSTON TX 77098-3099
United States

1.4. Emergency and contact telephone numbers

Emergency telephone : 1 (800) 424-9300 CHEMTREC ® (USA & Canada)
01-800-00-214-00 (MEX. REPUBLIC)

Contact telephone number : US: +1-800-765-8292 (Product information)
(product information): US: +1-713-525-6500 (Product information)

2. HAZARDS IDENTIFICATION

2.1. Emergency Overview:

NFPA : H= 3 F= 0 I= 0 S= None
HMIS : H= 3 F= 0 R= 0 PPE = Supplied by User; dependent on local conditions

General Information

Appearance : liquid
Colour : colourless
Odour : pungent

Main effects

- Hazardous decomposition products formed under fire conditions.
- Corrosive
- Harmful by inhalation, in contact with skin and if swallowed.

2.2. Potential Health Effects:

Inhalation

- Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough.
- Breathing difficulties



- Aspiration may cause pulmonary oedema and pneumonitis.
- At high concentrations, risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia.
- Repeated or prolonged exposure: sore throat, Nose bleeding, chronic bronchitis.

Eye contact

- May cause permanent eye injury.
- May cause blindness.
- Intoxication hazards by simultaneous inhalation of the product.
- Symptoms: Burn, Lachrymation, Redness, Swelling of tissue.

Skin contact

- Causes severe burns.
- Risk of shock.
- In case of contact with fingernails, severe pain after several hours.
- Risk of hypocalcemia following the extend of the lesions.
- Intoxication hazards by simultaneous inhalation of the product.
- Symptoms: Irritation, Redness, Swelling of tissue.

Ingestion

- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- Risk of throat (o)edema and suffocation.
- Risk of chemical pneumonitis from product inhalation.
- risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia
- Risk of convulsions, loss of consciousness, deep coma and cardiopulmonary arrest.
- Symptoms: Nausea, Bloody vomiting, Abdominal pain, Diarrhoea, Cough, Severe shortness of breath.

Other toxicity effects

- See section 11: Toxicological Information

2.3. Environmental Effects:

- See section 12: Ecological Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hydrogen fluoride

CAS-No. : 7664-39-3
Concentration : <= 1,0 %

Hexafluorosilicic acid

CAS-No. : 16961-83-4
Concentration : >= 23,0 - <= 25,0 %

4. FIRST AID MEASURES

4.1. Inhalation

- In case of accident by inhalation: remove casualty to fresh air and keep at rest.
- Oxygen or artificial respiration if needed.
- Victim to lie down in the recovery position, cover and keep him warm.
- Call a physician immediately.
- Take victim immediately to hospital.

4.2. Eye contact

- Immediate medical attention is required.
- Take victim immediately to hospital.
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).

4.3. Skin contact

- Call a physician immediately.
- Take victim immediately to hospital.
- Take off contaminated clothing and shoes immediately.
- Wash off with plenty of water.
- Keep warm and in a quiet place.

4.4. Ingestion

- Call a physician immediately.
- Take victim immediately to hospital.

If victim is conscious:

- If swallowed, rinse mouth with water (only if the person is conscious).
- Do NOT induce vomiting.
- Artificial respiration and/or oxygen may be necessary.

If victim is unconscious but breathing:

- Oxygen or artificial respiration if needed.

5. FIRE-FIGHTING MEASURES

5.1. Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Extinguishing media which shall not be used for safety reasons

- None.

5.3. Special exposure hazards in a fire

- The product is not flammable.
- Not combustible.
- Heating can release hazardous gases.
- Gives off hydrogen by reaction with metals.

5.4. Hazardous decomposition products

- Hydrogen
- Hydrogen fluoride

5.5. Special protective equipment for fire-fighters

- Wear self-contained breathing apparatus and protective suit.
- Fire fighters must wear fire resistant personnel protective equipment.
- Wear chemical resistant oversuit
- Protect intervention team with a water spray as they approach the fire.

5.6. Other information

- Cool containers / tanks with water spray.
- Approach from upwind.
- Suppress (knock down) gases/vapours/mists with a water spray jet.
- After the fire, proceed rapidly with cleaning of surfaces exposed to the fumes in order to limit equipment damage.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

- Refer to protective measures listed in sections 7 and 8.
- Approach from upwind.
- Isolate the area.

- Wear self-contained breathing apparatus in confined spaces, in cases where the oxygen level is depleted, or in case of significant emissions.
- Prevent further leakage or spillage if safe to do so.
- Keep away from Incompatible products.
- Suppress (knock down) gases/vapours/mists with a water spray jet.
- Avoid spraying the leak source.
- Protect intervention team with a water spray as they approach the fire.

6.2. Environmental precautions

- If the product contaminates rivers and lakes or drains inform respective authorities.
- Do not flush into surface water or sanitary sewer system.

6.3. Methods for cleaning up

- Dam up.
- Soak up with inert absorbent material.
- Prevent product from entering drains.
- Dilute with water.
- Contact with water may produce heat release and presents risks of splashing.
- When diluting, always add the product to water. Never add water to the product.

7. HANDLING AND STORAGE

7.1. Handling

- Used in closed system
- Handle small quantities under a lab hood.
- Use only in well-ventilated areas.
- Use only equipment and materials which are compatible with the product.
- Keep away from Incompatible products.
- Preferably transfer by pump or gravity.
- For further information, please contact:
- Manufacturer, importer, supplier

7.2. Storage

- Keep container tightly closed.
- Keep in a cool, well-ventilated place.
- Keep away from heat.
- Keep away from Incompatible products.
- Keep in a bonded area.
- Information about special precautions needed for bulk handling is available on request.

7.3. Packaging material

- Plastic material
- Steel coated.

7.4. Other information

- Provide tight electrical equipment well protected against corrosion.
- For personal protection see section 8.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure Limit Values

Hydrogen fluoride

- OEL (Canada - Ontario)
CEV = 3 ppm

CEV = 2,5 mg/m³

Remarks: As F

- US. ACGIH Threshold Limit Values 2007

time weighted average = 0,5 ppm

Remarks: as F

- US. ACGIH Threshold Limit Values 2007

Ceiling Limit Value = 2 ppm

Remarks: as F

- Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) 10 2006

Ceiling Limit Value = 3 ppm

Ceiling Limit Value = 2,3 mg/m³

Remarks: as F

- Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) 07 2007

Ceiling Limit Value = 2 ppm

Remarks: as F

- Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents) 12 2007

time weighted average = 0,5 ppm

Remarks: as F

- Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents) 12 2007

Ceiling Limit Value = 2 ppm

Remarks: as F

- Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) 2006

Ceiling Limit Value = 3 ppm

Ceiling Limit Value = 2,6 mg/m³

Remarks: as F

- Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) 2006

Remarks: as F, Recirculation prohibited

- US. ACGIH Threshold Limit Values 2008

Remarks: as F, Can be absorbed through skin.

Hexafluorosilicic acid

- US. ACGIH Threshold Limit Values

Remarks: none established

- US. ACGIH Threshold Limit Values 2008

time weighted average = 2,5 mg/m³

Remarks: as F

- Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) 2006

time weighted average = 2,5 mg/m³

Remarks: as F

- Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) 10 2006

time weighted average = 2,5 mg/m³

Remarks: as F

- Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) 07 2007

time weighted average = 2,5 mg/m³

Remarks: as F

- Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents) 12 2007

time weighted average = 2,5 mg/m³

Remarks: as fluoride

8.2. Engineering controls

- Provide appropriate exhaust ventilation at machinery.
- Apply technical measures to comply with the occupational exposure limits.
- Refer to protective measures listed in sections 7 and 8.

8.3. Personal protective equipment

8.3.1. Respiratory protection

- In the case of dust or aerosol formation use respirator with an approved filter.
- Self-contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.

8.3.2. Hand protection

- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Protective gloves - impervious chemical resistant:
- Suitable material: butyl-rubber

8.3.3. Eye protection

- Face-shield
- Chemical resistant goggles must be worn.

8.3.4. Skin and body protection

- Chemical resistant apron
- If splashes are likely to occur, wear:
- butyl-rubber
- Boots
- Do not wear leather shoes.

8.3.5. Hygiene measures

- Use only in an area equipped with a safety shower.
- Eye wash bottle with pure water
- Take off contaminated clothing and shoes immediately.
- Wash contaminated clothing before re-use.
- Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information

Appearance	: liquid
Colour	: colourless
Odour	: pungent

9.2. Important health safety and environmental information

pH	: 1
	Concentration: 100 g/l
Boiling point/boiling range	: 108,5 °C (227,3 °F)
Flash point	: Remarks: not applicable
Flammability	: Remarks: The product is not flammable.

Explosive properties	: <u>Explosion danger.</u> <i>Remarks:</i> With certain materials (see section 10).
Oxidizing properties	: <i>Remarks:</i> not applicable
Vapour pressure	: 30 hPa <i>Temperature:</i> 20 °C (68 °F)
Relative density / Density	: 1,32 <i>Temperature:</i> 20 °C (68 °F)
Solubility	: Water <i>Remarks:</i> completely miscible, Reacts violently with water.
Partition coefficient: n-octanol/water	: <i>Remarks:</i> not applicable
Vapour density	: > 1 <i>Temperature:</i> 20 °C (68 °F)

9.3. Other data

Freezing point:	: < -30 °C (-22 °F)
Decomposition temperature	: 108 °C (226 °F)

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under recommended storage conditions.
- Corrosive in contact with metals
- Gives off hydrogen by reaction with metals.
- Risk of violent reaction.
- Risk of explosion.

10.2. Conditions to avoid

- To avoid thermal decomposition, do not overheat.
- Keep at temperature not exceeding: 108 °C (226 °F)

10.3. Materials to avoid

- glass, Strong oxidizing agents, Metals

10.4. Hazardous decomposition products

- Hydrogen, Hydrogen fluoride

11. TOXICOLOGICAL INFORMATION

Toxicological data

Acute oral toxicity

- LD 100, guinea pig, 80 mg/kg (2 % solution)

Acute inhalation toxicity

- LC50, 1 h, rat, 850 - 1.070 mg/m3

Irritation (other route)

- Corrosive

Chronic toxicity

- Inhalation, Prolonged exposure, rat, Target Organs: Respiratory system, Kidney, Liver, testes, observed effect, (hydrofluoric acid)
- Inhalation, Prolonged exposure, rat, Target Organs: cardio-vascular system, nervous system, observed effect, (hydrofluoric acid)

Remarks

- corrosive effects
- Liver and kidney injuries may occur.
- Chronic exposure may entail dental or skeletal fluorosis

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Fishes, *Salmo gairdneri*, LC50, 96 h, 51 mg/l (Fluorides)
- Crustaceans, *Mysidopsis*, EC50, 96 h, 10,5 mg/l (Fluorides)
Remarks: salt water
- Crustaceans, *Daphnia magna*, EC50, 48 h, 97 mg/l (Fluorides)
Remarks: fresh water

Chronic toxicity

- Fishes, *Salmo gairdneri*, LC50, 21 Days, 2,7 - 4,7 mg/l (Fluorides)
- Crustaceans, *Daphnia magna*, NOEC, 21 Days, 3,7 mg/l (Fluorides)
- Algae, *Scenedesmus* sp., EC50, 96 h, 43 mg/l (Fluorides)

12.2. Mobility

- Air
Remarks: mobility as solid aerosols
- Water, Solubility, Mobility
- Soil/sediments, (fluoride)
Conditions: pH
Remarks: potential adsorption

12.3. Persistence and degradability

Abiotic degradation

- Air
Result: neutralization by natural alkalinity
- Water, Soil
Result: ionization/neutralization
- Water, Soil
Result: complexation/precipitation of inorganic materials

Biodegradation

- Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

12.4. Bioaccumulative potential

- Bioaccumulative potential: log Pow
Result: not applicable
- (Fluorides)
Result: accumulation into vegetable leafs

12.5. Other adverse effects

- no data available

12.6. Remarks

- No data is available on the product itself.

- Ecological data therefore refers only to the effects of the decomposition products.
- Harmful to aquatic organisms.
- Nevertheless, hazard for the environment is limited due to product properties:
- . low chronic toxicity.
- Product fate is highly dependent on environmental conditions: pH, temperature, redox potential, mineral and organic content of the medium,...

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- In accordance with local and national regulations.
- Refer to manufacturer/supplier for information on recovery/recycling.

13.2. Packaging treatment

- Clean container with water.
- The empty and clean containers are to be reused in conformity with regulations.
- To avoid treatments, as far as possible, use dedicated containers.

13.3. RCRA Hazardous Waste

- Listed RCRA Hazardous Waste (40 CFR 302) - No
- Unlisted RCRA Hazardous Waste (40 CFR 302) - Yes
- D002 (corrosive waste)

14. TRANSPORT INFORMATION

UN-Number	1778
IATA-DGR	
Class	8
Packing group	II
ICAO-Labels	Corrosive
Proper shipping name: Fluorosilicic Acid	
IMDG	
Class	8
Packing group	II
ICAO-Labels	Corrosive
Proper shipping name: Fluorosilicic Acid	
U.S. Dept of Transportation	
Class (Subsidiary)	8
Packing group	II
Label (Subsidiary)	Corrosive
Marine pollutant:	no
Emergency info:	ERG: 154
Proper shipping name: Fluorosilicic Acid	
Canada (TDG)	
Class (Subsidiary)	8
Packing group	III

Label (Subsidiary)	Corrosive
Marine pollutant:	no
Emergency info:	ERG: 154
Proper shipping name: Fluorosilicic Acid	

15. REGULATORY INFORMATION

15.1. Inventory Information

Australian Inventory of Chemical Substances (AICS)	: -	In compliance with inventory.
Canadian Domestic Substances List (DSL)	: -	In compliance with inventory.
Inventory of Existing Chemical Substances (China) (IECS)	: -	In compliance with inventory.
Japan (ENCS) List (ENCS (JP))	: -	In compliance with inventory.
New Zealand Interim Inventory of Chems. (NZ CLSC)	: -	In compliance with inventory.
Toxic Substance Control Act list (TSCA)	: -	In compliance with inventory.
EU list of existing chemical substances (EINECS)	: -	In compliance with inventory.
Korea Existing Chemicals Inv. (KECI) (KECI (KR))	: -	In compliance with inventory.
Philippines PICCS (PICCS (PH))	: -	In compliance with inventory.

15.2. Other regulations

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

- not regulated.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

- not regulated.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

- not regulated.

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

- yes.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

- not regulated.

15.3. Classification and labelling

Canada. Canadian Environmental Protection Act (CEPA). WHMIS Ingredient Disclosure List (Can. Gaz., Part II, Vol. 122, No. 2)

- E Corrosive Material

Remarks: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

EC Label

- Hazardous components which must be listed on the label: Hydrogen fluoride / Hexafluorosilicic acid
-

Symbol(s)	Xn	Harmful
R-phrase(s)	R20/21/22 R36/37/38	Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin.
S-phrase(s)	S 7/9 S26 S36/37 S45	Keep container tightly closed and in a well-ventilated place. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. OTHER INFORMATION

Ratings :

NFPA (National Fire Protection Association)

Health = 3 Flammability = 0 Instability = 0 Special =None

HMIS (Hazardous Material Information System)

Health = 3 Fire = 0 Reactivity = 0 PPE : Supplied by User; dependent on local conditions

Further information

- HF-Antidote Gel from IPS Healthcare is recommended as treatment for injuries from hydrofluoric acid.
- Update
This data sheet contains changes from the previous version in section(s): 1.1, 1.4
- Distribute new edition to clients

Material Safety Data Sheets contain country specific regulatory information; therefore, the MSDS's provided are for use only by customers of the company mentioned in section 1 in North America. If you are located in a country other than Canada, Mexico or the United States, please contact the Solvay Group company in your country for MSDS information applicable to your location. The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product). To our actual knowledge, the information contained herein is accurate as of the date of this document. However, neither the company mentioned in section 1 nor any of its affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this information or its use. This information is for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right. The user alone must finally determine suitability of any information or material for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infringed. This information gives typical properties only

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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

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Fluorosilicic Acid

Fluorosilicic Acid (Hydrofluorosilicic Acid, HFS)

Technical Data Sheet

CHEMICAL ANALYSIS	SPECIFICATION	TYPICAL ANALYSIS
H ₂ SiF ₆ , %	23-25	23.5
Fluosilicic Salts, %		none
Heavy Metals (as Pb), %	0.020 max	<0.005
HF, %	1.0% max	0.2
pH of 1%, H ₂ SiF ₆	1.2	
Color, APHA	100 max	<60

Product meets ANSI/AWWA Standard B703-00, and is certified by NSF International or Classified by UL to ANSI/NSF Standard 60. Maximum use level for potable water treatment 6.0 mg/L

PHYSICAL PROPERTIES

Physical Description	Aqueous solution, water white to straw-yellow, corrosive acid, irritating to skin and having pungent odor.
Molecular Weight	144.08
Specific Gravity @ 60°F	1.23
Boiling Point of Aqueous 23 % Solution	221°F Decomposes
Freezing Point of Aqueous 23 % Solution	5°F (approx.)
Freezing Point of Aqueous 25 % Solution	-4°F

CONTAINERS

Tank truck, rubber or plastic-lined	40,000 lb (approx.)
Tank car, rubber or plastic-lined	196,000 lb net (approx.)

DOT AND FREIGHT DESCRIPTION

Hazardous Material Description	Fluorosilicic acid
Haz. Mat. Class, I.D.#, Packaging Group	8, UN 1778, PG II
Freight Classification	Hydrofluorosilicic Acid
Principle CAS Number	16961-83-4
RQ	None
Placard	Corrosive
Label	Corrosive



Solvay Fluorides

A Subsidiary of Solvay Chemicals, Inc.



Fluorosilicic Acid

Fluorosilicic Acid (Hydrofluorosilicic Acid, HFS)

Technical Data Sheet

Use in public Water Treating Plants:

The reduction in dental caries by adjusting the fluoride content of public water supplies is a matter of common knowledge today, a decade following the first experimental installation in Newburgh, New York. Approximately sixty million people in over three thousand communities are now drinking fluoride-treated water from water purification plants where fluoridation is currently practiced.

Fluoridation is concerned with the controlled introduction to water of the fluoride ion. Other materials in the fluoride compound simultaneously introduced into the water with the fluoride ions are carriers which provide no benefits and are nontoxic. The addition of one part per million of fluoride requires that the product be soluble, of definite concentration and have high purity standards.

In conformity with the American Water Works Association standard B703-94, the term fluorosilicic acid has replaced the more technical designation of hydrofluosilicic acid. After the original work with sodium fluoride proved the effectiveness of fluoride on tooth health and a broad fluoridation program was envisaged, new sources of fluoride and economics of their use were investigated. Fluorosilicic acid is a high purity source of fluoride. It is simpler to use than any other chemical approved for water fluoridation purposes, primarily because it is a liquid and can therefore be accurately measured and fed with a minimum of equipment. In contrast to powdered or granular chemicals, it presents no dust problems, no measuring problems and handling requires a minimum of labor. Today most of the large cities and many small ones are fluoridating with fluorosilicic acid. It is readily available in tank cars or tank trucks and can also be supplied in 15 gallon carboys and 55 gallon drums. The addition of fluorosilicic acid to a water supply can be readily controlled to give a total fluoride (F) level of one part per million which has been established as effective for reducing tooth decay. It should be used in accordance with procedures approved by each state's department of health.

Acid Characteristics:

Fluorosilicic acid is a transparent, straw-colored, corrosive liquid having the chemical formulation of H_2SiF_6 . It is manufactured in modern rubber-lined equipment producing an acid of high commercial purity. Commercial water solutions of the acid are available, having concentration of between 20% and 25% H_2SiF_6 . Fluorosilicic acid is generally believed not to exist in the vapor phase, but only in solution. Upon vaporizing, it decomposes into hydrofluoric acid (HF) and silicon tetrafluoride. This equilibrium exists at the surface of strong solutions of fluorosilicic acid and if stored in glass containers, the small concentration of hydrofluoric acid may very slowly attack the glass above the solution level. For this reason, it is generally shipped in polyethylene containers rather than glass carboys. A 23% fluorosilicic acid-water solution weighs 10.2 pounds per gallon at 60°F, and has a fluoride (F) content of 17.41%.

Fluorosilicic Acid

Fluorosilicic Acid (Hydrofluorosilicic Acid, HFS)

Technical Data Sheet

Installation:

In a typical large plant installation, rubber-lined vented storage tanks are usually mounted outside the building with the tanks ranging in size from 4,500 to 6,500 gallon capacities. These tanks, equipped with recording level gauges, feed the acid through plastic piping or tubing to the dosage unit. Feeding is regulated by controlled volume pumps. Metering is used for accurate flow records. Fluorosilicic acid may be handled in rubber-lined, saran or other available corrosive-resistant equipment as suggested below:

Pipes and lines	-	rubber, saran or polyethylene
Pumps	-	Lucite, saran or Hastelloy
Valves	-	rubber-lined or polyethylene-lined
Tanks	-	rubber-lined, saran or polyethylene-lined

Acid should be pumped by positive diaphragm proportioning pumps.

Operation procedure:

The drum or drums of fluorosilicic acid should be mounted on a platform of sufficient size and capacity to permit weighing the amount used each day. Proportioning pumps deliver an accurate volume, but for small pumping rates, the dosage may be more satisfactorily regulated by periodic weighing of the drum. Whenever a drum of fluorosilicic acid is replaced on the scale, the time and weight should be recorded in the daily operating log. Whenever dosage is changed to a varying pumpage, the time and feeder setting should be recorded in the daily log.

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