



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name FLUROSILICIC ACID, 20-25%, SOLUTION
Catalog # 5215
Version # 01
Revision date 25-Sep-2009
CAS # Mixture
CAS # 16961-83-4
Synonym(s) HEXAFLUROSILICIC ACID
Manufacturer information GFS Chemicals, Inc.
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2. Hazards Identification

Emergency overview DANGER

Corrosive. Causes skin and eye burns. Harmful if swallowed.
OSHA regulatory status This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects
Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.
Eyes Causes eye burns. Risk of serious damage to eyes. Do not get this material in contact with eyes.
Skin Causes skin burns. Do not get this material in contact with skin.
Inhalation Causes burns. Do not breathe dust/fume/gas/mist/vapors/spray.
Ingestion Harmful if swallowed. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Do not ingest.
Potential environmental effects Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
FLUROSILICIC ACID	16961-83-4	20 - 40
Non-hazardous components	CAS #	Percent
WATER	7732-18-5	60 - 80

Composition comments

US OSHA Table Z-2: Time Weighted Average (TWA)

FLUROSILICIC ACID 16961-83-4 Dust. MGM3 - 2.5

4. First Aid Measures

First aid procedures

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. A 1.0 pct calcium gluconate gel solution can be used as an eye wash. Continue rinsing. Get medical attention immediately.

Skin contact Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. A 2.5 pct calcium gluconate gel applied topically after skin has been thoroughly washed will help reduce severity of symptoms. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.

Inhalation Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

Ingestion Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth thoroughly. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Notes to physician In case of shortness of breath, give oxygen. Keep victim warm.

General advice Immediate medical attention is required. In case of shortness of breath, give oxygen. Keep victim warm. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties No unusual fire or explosion hazards noted. The product is not flammable.

Extinguishing media

Suitable extinguishing media Water.

Protection of firefighters

Protective equipment and precautions for firefighters In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out.

Specific methods In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

6. Accidental Release Measures

Personal precautions Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Ventilate closed spaces before entering them. Ensure adequate ventilation.

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods for containment Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

Methods for cleaning up Large Spills: Dike far ahead of spill for later disposal. Neutralize with lime or soda ash. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water.

Never return spills in original containers for re-use.

7. Handling and Storage

Handling Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. Do not use in areas without adequate ventilation. Wash thoroughly after handling. Handle and open container with care.

Storage Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	CAS #	Type	Value	Form
FLUOROSILICIC ACID	16961-83-4	TWA	2.5 mg/m3	

U.S. - OSHA

Components	CAS #	Type	Value	Form
FLUOROSILICIC ACID	16961-83-4	PEL	2.5 mg/m3	
		TWA	2.5 mg/m3	Dust.
			2.5 mg/m3	

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection Do not breathe dust/fume/gas/mist/vapors/spray. Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection Wear protective gloves.

Eye / face protection Do not get in eyes. Chemical goggles are recommended. Face-shield.

Skin protection Do not get this material in contact with skin. Do not get this material on clothing. Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Chemical resistant gloves.

General hygiene considerations Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using, do not eat, drink or smoke. Wash hands after handling and before eating. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

General Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations.

9. Physical & Chemical Properties

Appearance	Clear.
Color	Colorless.
Odor	Pungent.
Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	1 (100 g/L in water)
Melting point	-22 °F (-30 °C)
Freezing point	Not available.
Boiling point	228.2 °F (108.5 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.32
Relative density	1.32 g/cm3
Solubility (water)	Completely miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	226.4 °F (108 °C)
Percent volatile	77.5 % estimated
Molecular weight	144.1100 g/mol

Molecular formula H₂SiF₆

10. Chemical Stability & Reactivity Information

Chemical stability Material is stable under normal conditions. Material reacts with water.
Incompatible materials Amines. Acids.
Hazardous decomposition products Hydrogen fluoride.
Possibility of hazardous reactions Hazardous polymerization does not occur.

11. Toxicological Information

Acute effects Causes burns.

Acute Oral: LD 50

FLUROSILICIC ACID	16961-83-4	Rat 430 mg/kg
FLUROSILICIC ACID	16961-83-4	Guinea pig 200 mg/kg

Toxicology data for the preparation

Acute LD50: 889 mg/kg, Guinea pig, Oral, estimated

Chronic effects The fluoride ion is capable of penetrating the skin where it will attack underlying tissues and bone. Large exposures may cause depletion of calcium in the body (hypocalcemia) and other toxic effects.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

US ACGIH Threshold Limit Values: A4 carcinogen

FLUROSILICIC ACID	16961-83-4	Group A4 Not classifiable as a human carcinogen.
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Corrosivity Hazardous by OSHA criteria.

12. Ecological Information

Ecotoxicity Expected to be harmful to aquatic organisms.

Persistence and degradability Not available.

13. Disposal Considerations

Waste codes D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel]

Disposal instructions Dispose of this material and its container to hazardous or special waste collection point. Neutralize and absorb with absorbing material and dispose of as solid waste. Dispose in accordance with all applicable regulations.

Waste from residues / unused products Not applicable.

14. Transport Information

DOT

Basic shipping requirements:

Proper shipping name	Fluorosilicic acid
Hazard class	8
UN number	UN1778
Packing group	II
Additional information:	
Special provisions	A6, A7, B2, B15, IB2, N3, N34, T8, TP2, TP12
Packaging exceptions	None
Packaging non bulk	202
Packaging bulk	242
ERG number	154



15. Regulatory Information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

FLUOROSILICIC ACID 16961-83-4 Listed.

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings Health: 3
Flammability: 0
Physical hazard: 1

NFPA ratings Health: 3
Flammability: 0
Instability: 1

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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