SAFETY DATA SHEET

Version 3.01

1. Identification of the Substance / Preparation and of the Company / Undertaking

Product Name Hydrofluosilicic Acid
Product Code 41868
UN/ID No UN1778
Recommended Use Industrial, Manufacturing or Laboratory use.
Restrictions on Use None known

Manufacturer
Hawkins, Inc., 2381 Rosegate, Roseville, MN 55113 (612-331-6910)

Emergency Telephone:
CHEMTREC (US): 1-800-424-9300

2. Hazards Identification

GHS - Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal Word: **Danger**

Hazard Statements:
- Harmful if swallowed or if inhaled
- Toxic in contact with skin
- Causes severe skin burns and eye damage
- May be corrosive to metals

Precautionary Statements:
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Do not breathe dusts or mists
- Wear protective gloves/protective clothing/eye protection/face protection
- Keep only in original container
- Immediately call a POISON CENTER or doctor/physician
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- Call a POISON CENTER or doctor if you feel unwell
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

• Wash contaminated clothing before reuse
• IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
• IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
• Rinse mouth
• Do NOT induce vomiting
• Absorb spillage to prevent material damage
• Store locked up
• P406 - Store in corrosion resistant container with a resistant inner liner
• Dispose of contents/ container to an approved waste disposal plant

Other Information

Not applicable

3. Composition / Information on Ingredients

Chemical name	CAS No.	Weight-%
Fluorosilicic acid	16961-83-4	23-25
Hydrogen fluoride	7664-39-3	<1
Water	7732-18-5	Balance

Any concentration shown as a range is due to batch variation or the exact percentage has been withheld as a trade secret.

4. First Aid Measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. Hydrofluoric (HF) burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.

Skin contact Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms Burning. Coughing and/ or wheezing. Redness. May cause blindness.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. Fire-fighting Measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors.
Hazardous combustion products	Hydrogen fluoride. Silicon oxides.
Explosion Data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Attention! Corrosive material. Keep people away from and upwind of spill/leak.
Other information	Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. Handling and Storage

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. Store in accordance with AWWA B703- Fluorosilicic Acid.
Incompatible materials	Alkali. Strong acids. Strong oxidizing agents. Metals. Glass. Stoneware.

8. Exposure Controls / Personal Protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Fluorosilicic acid 16961-83-4	TWA: 2.5 mg/m³ F	TWA: 2.5 mg/m³ F (vacated) TWA: 2.5 mg/m³	IDLH: 250 mg/m³ F TWA: 2.5 mg/m³ F
Hydrogen fluoride 7664-39-3	TWA: 0.5 ppm F TWA: 2.5 mg/m³ F S* Ceiling: 2 ppm F	TWA: 3 ppm F TWA: 2.5 mg/m³ F (vacated) TWA: 3 ppm F (vacated) TWA: 2.5 mg/m³ (vacated) STEL: 6 ppm F	IDLH: 30 ppm IDLH: 250 mg/m³ F Ceiling: 6 ppm 15 min Ceiling: 5 mg/m³ 15 min TWA: 3 ppm TWA: 2.5 mg/m³

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Face protection shield. Tight sealing safety goggles.
Hand protection	Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains.
General hygiene considerations	Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid		
Appearance:	Clear	**Odor:**	Pungent
Color:	Colorless to light yellow	**Odor Threshold:**	No information available

Property	**Values**	**Remarks • Method**
pH:		No information available
Salt Out Point:		No information available
Melting Point/Freezing Point:	-16 °C / 4 °F	
Boiling Point/Boiling Range:	106 °C / 222.5 °F	
Flash Point:		No information available
Evaporation Rate (BuAc=1):		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air:		No information available
Upper Flammability Limit:		**Lower Flammability Limit:**
Vapor Pressure (mm Hg):		No information available
Vapor density (Air =1)		No information available
Specific Gravity (H_2O=1):	1.225	
Specific Gravity (2nd value):		
Water Solubility:	Miscible in all proportions in water	
Solubility(ies):		No information available
Partition Coefficient (n-octanol/water)		No information available
Autoignition Temperature:		No information available
Decomposition Temperature:		No information available
Kinematic Viscosity:		No information available
Dynamic Viscosity:		No information available
Oxidizing Properties:	No information available	
Explosive Properties:	No information available	

9.2. Other information

Softening Point:	No information available
Molecular Weight:	144.09
VOC Content(%):	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and Reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Exposure to air or moisture over prolonged periods. Reacts dangerously with glass.
Incompatible materials	Alkali. Strong acids. Strong oxidizing agents. Metals. Glass. Stoneware.
Hazardous decomposition products	Hydrogen fluoride. Oxides of silica.

11. Toxicological Information

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.
Eye contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Causes severe burns. Toxic in contact with skin. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Numerical measures of toxicity

No information available

Acute Toxicity:

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	387.99 mg/kg
ATEmix (dermal)	375.00 mg/kg
ATEmix (inhalation-dust/mist)	3.76 mg/l

Unknown Acute toxicity 26 % of the mixture consists of ingredient(s) of unknown toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
25 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
26 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
26 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
25 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD_{50} :	Dermal LD_{50} :	LC_{50} (Lethal Concentration):
Fluorosilicic acid 16961-83-4	= 430 mg/kg (Rat)	-	= 1.11 mg/L (Rat) 1 h
Hydrogen fluoride 7664-39-3	-	-	= 0.79 mg/L (Rat) 1 h
Water 7732-18-5	> 90 mL/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes severe burns.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Risk of serious

damage to eyes.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity See section 2 for classified hazards based on component information.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Fluorosilicic acid 16961-83-4	-	Group 3	-	-

IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target Organ Effects: Respiratory system, Eyes, Skin.
Other Adverse Effects: No information available.
Aspiration hazard No information available.

12. Ecological Information

Ecotoxicity The environmental impact of this product has not been fully investigated.

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Fluorosilicic acid 16961-83-4	-	65 mg/L (LC50 96 h static - Poecilia reticulata) 28.7 mg/L (LC50 96 h static - Pimephales promelas)	-	-
Hydrogen fluoride 7664-39-3	-	-	-	270 mg/L (EC50 48 h - Daphnia species)

Persistence and Degradability: No information available.
Bioaccumulation: There is no data for this product.

Chemical name	Partition Coefficient:
Hydrogen fluoride 7664-39-3	-1.4

Other Adverse Effects: No information available.

13. Disposal Considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local, state, and national regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging Do not reuse empty containers.
US EPA Waste Number (product as supplied) U134

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Hydrogen fluoride	U134	-	-	U134

7664-39-3				

14. Transport Information

DOT

Proper shipping name FLUOROSILICIC ACID
Hazard Class 8
UN/ID No UN1778
Packing Group II
Description UN1778, FLUOROSILICIC ACID, 8, PG II

15. Regulatory Information

International Inventories

AICS Complies
TSCA Complies
DSL/NDSL Complies
EINECS/ELINCS Complies
ENCS Complies
IECSC Complies
KECL Complies
PICCS Complies

Chemical name	AICS	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Fluorosilicic acid	Present	Present ACTIVE	Present	-	Present	-	Present	Present	Present	Present
Hydrogen fluoride	Present	Present ACTIVE	Present	-	Present	-	Present	Present	Present	Present
Water	Present	Present ACTIVE	Present	-	Present	-	Present	Present	Present	Present

Inventory Legend

AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

RESTRICTIONS - REACH TITLE VII No information available

US Federal Regulations

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Extremely Hazardous Substances TPQ
Hydrogen fluoride	100 lb	100 lb	100 lb TPQ

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Hydrogen fluoride	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

16. Other Information

NSF/ANSI 60 Certification

Certified to NSF/ANSI 60

Maximum Use (mg/L unless otherwise indicated): 5

Prepared By: HSE Department

Issue Date: 15-Aug-2014

Revision Date: 11-Jan-2021

Revision Note: SDS sections updated 9 16

Disclaimer:

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.

End of Safety Data Sheet