Safety Data Sheet

HYDROFLUOROSILICIC ACID 40%

SECTION 1. IDENTIFICATION

Product Identifier	Hydrofluorosilicic Acid 40% Hydrofluorosilicic Acid 40%, NSF® - 60
Other Means of Identification	Code: HFSANSF4023 DSL: Silicate(2-), hexafluoro-, dihydrogen CAS: 16961-83-4 IUPAC: Hexafluorosilicic acid Systematic: Dihydrogen hexafluorosilicate HFSA, Fluorosilicic acid
Product Use and Restrictions on Use	For commercial or industrial use. This product is certified to NSF / ANSI / CAN standard 60 for use in drinking water, see section 15 and the NSF website for further information.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada Phone: 1 (800) 387-7503 www.cleartech.ca
24 Hour Emergency Phone	(306) 664-2522

SECTION 2. HAZARD IDENTIFICATION

Corrosive to Metals	Category 1
Acute Oral Toxicity	Category 4
Skin Corrosion / Irritation	Category 1B
Eye Damage	Category 1

Pictograms

Signal Word: Danger

Hazard Statements

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

Precautionary Statements

Prevention

P234 Keep only in original packaging.
P260L Do not breathe mist, vapours or spray.
P264 Wash affected body parts thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280C Wear protective gloves, protective clothing, eye protection, face protection.

Response	P301 P330 P331 P312 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell. P303 P361 P353 P363 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. P304 P340 P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. P305 P351 P338 P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. P390 Absorb spillage to prevent material damage.
Storage	P405 Store locked up.
Disposal	P501 Dispose of contents / container in accordance with all federal, provincial and / or local regulations including the Canadian Environmental Protection Act.
Hazards not Otherwise Classified	Not available

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients:

Chemical Name	*Synonym(s)*	*CAS Number*	*Concentration (w/w%)*
Silicate(2-), hexafluoro-, dihydrogen	Hydroflurosilicic acid	16961-83-4	40-41%
Hydrofluoric acid	HF	7664-39-3	≤0.5%

SECTION 4. FIRST-AID MEASURES

Description of Necessary First-Aid Measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. If breathing has stopped, trained personnel should begin rescue breathing or if the heart has stopped, immediately start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Avoid mouth to mouth contact by using a barrier device.
Ingestion	Rinse mouth. Do NOT induce vomiting. If vomiting occurs naturally, lie on your side, in the recovery position. Immediately call a POISON CENTER or doctor.
Skin Contact	Avoid direct contact. Wear chemical protective clothing, if necessary. Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse.
Eye Contact	Avoid direct contact. Wear chemical protective clothing, if necessary. Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30-60 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor.

Most Important Symptoms and Effects, Both Acute and Delayed

Inhalation	Causes severe burns to the mouth and throat.
Ingestion	Harmful if swallowed. Causes severe burns to the mouth and throat.
Skin Contact	Causes severe skin burns and eye damage.
Eye Contact	Causes serious eye damage.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Extinguish fire using extinguishing agents suitable for the surrounding fire.
Unsuitable Extinguishing Media	Water jets are not recommended in fires involving chemicals.
Specific Hazards Arising from the Chemical	Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. In the event of a fire toxic and corrosive fumes of hydrogen flouride and silicon tetrafluoride may be released.
Special Protective Equipment for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment (See Section 8 Exposure Controls and Personal Protection). Stay upwind, ventilate area. Do not breathe mist, vapours or spray.
Environmental Precautions	Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
Methods and Materials for Containment and Cleaning Up	SMALL SPILLS: Stop or reduce leak if safe to do so. Clean up spill with non-reactive absorbent and place in suitable, covered, labeled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling	An emergency shower and eyewash station should be available, tested, and be near to the product being handled in accordance with provincial regulations. Use sensible workplace hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Prevent the release of mist, vapours or spray in the workplace air. Never return contaminated material to its original container.
Conditions for Safe Storage	Store in a cool, dry, well-ventilated area, out of direct sunlight, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Protect label and keep it visible. Empty containers may contain hazardous residues. Do not transfer to metal containers.
Incompatibilities	Dissolves silica-based materials, such as glass, pottery and sand Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Metals, such as aluminum, steel, and brass.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

Component	*Regulation*	*Type of Listing*	*Value*
Hydrogen fluoride, as F	ACGIH	Ceiling	2 ppm (3 mg/m^3)

Engineering Controls

Ventilation Requirements	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Protective Equipment

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

Eye and Face Protection	Where there is potential eye or face exposure, tightly fitting safety goggles and a face shield or a full-face respirator or similar protective equipment which protects the wearer's face and eyes are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.
Hand and Body Protection	Disposable latex or nitrile gloves are recommended to prevent incidental contact. Leather gloves are not recommended for chemical protection. Butyl rubber, neoprene, or PVC skin protection is recommended for extended contact. Refer to manufacturer's specifications for breakthrough times and permeability information; note that breakthrough times and permeability vary with temperature, application and age of material. Continued use of contaminated safety gear or clothing is not recommended, wash before reuse or discard.
Respiratory Protection	Where concentrations are above recommended limits, approved respiratory protection should be worn, ensure cartridges provide protection against this product. Depending on conditions such as temperature and handling method negative pressure masks may not provide suitable protection, and positive pressure respirators or SCBAs may be required. Reevaluate any respiratory protection used regularly, as their protective effects tend to degrade over time. In emergency conditions SCBAs are recommended. For NIOSH respirator recommendations for: Hydrogen fluoride see section 16

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Colour	Colourless to pale yellow
Odour	Sour, pungent
Odour Threshold	Not available
pH	~1.0
Melting Point / Freezing Point	Not available
Initial Boiling Point and Boiling Range	Not available
Flash Point	Non-flammable

Evaporation Rate	Not available
Flammability	Not applicable
Flammability Limits	Not available
Vapour Pressure	~3 kPa @ 20 °C
Vapour Density	0.69 (HF)
Relative Density (Specific Gravity)	~1.4 @ 20 °C
Solubility	Soluble in water in water
Partition Coefficient: n-Octanol/Water	Not available
Auto-Ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	~10 cP @ 20 °C
Particle Characteristics	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	May be corrosive to metals. Reacts violently with bases.
Stability	This product is stable if stored according to the recommendations in section 7.
Possibility of Hazardous Reactions	Reacts with many metals to liberate hydrogen gas that can form explosive mixtures.
Conditions to Avoid	Avoid contact with incompatible materials.
Incompatible Materials	Dissolves silica-based materials, such as glass, pottery and sand Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Metals, such as aluminum, steel, and brass.
Hazardous Decomposition Products	In the event of a fire toxic and corrosive fumes of hydrogen flouride and silicon tetrafluoride may be released.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity

There is no available toxicity data for this product.

Toxic Health Effect Summary

Inhalation	Causes severe burns to the mouth and throat.
Ingestion	Harmful if swallowed. Causes severe burns to the mouth and throat.
Skin Contact	Causes severe skin burns and eye damage.
Eye Contact	Causes serious eye damage.
Sensitization	This product and its components at their listed concentration have no known sensitizing effects.
Mutagenicity	This product and its components at their listed concentration have no known mutagenic effects.
Carcinogenicity	IARC has classified Fluorides (inorganic, used in drinking-water) as group 3, not classifiable as to its carcinogenicity to humans.
Reproductive Toxicity	This product and its components at their listed concentration have no known reproductive effects.

Specific Organ Toxicity	This product and its components at their listed concentration have no known effects on specific organs.
Aspiration Hazard	Not available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Component	*Type*	*Value*
Hydrofluorosilicic acid	LC50 - freshwater fish - 96 hours	50 mg/L
Hydrofluorosilicic acid	EC50 - aquatic invertebrates - 48 hours	13.2 mg/L
Hydrofluorosilicic acid	EC50 - aquatic algae - 72 hours	54.2 mg/L

Biodegradability	The domestic substance list categorizes hydrofluorosilicic acid as persistent.
Bioaccumulation Potential	The domestic substance list categorizes hydrofluorosilicic acid as non-bioaccumulative.
Mobility	This product is water soluble, is not predicted to adsorb to soil, and may contaminate ground water. This product will evaporate and may be spread via wind.
Other Adverse Effects	Not available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues / Unused Products	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility.

SECTION 14. TRANSPORT INFORMATION

UN Number	UN1778
UN Proper Shipping Name and Description	FLUOROSILICIC ACID
Transport Hazard Class(es)	8
Packing Group	II
Excepted Quantities	1 L
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Transport in Bulk	Not available MARPOL 73/78 and IBC Code: This product is not offered for sale in maritime bulk chemical tankers.
Special Precautions	No special precautions
Additional Information	Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position.

SECTION 15. REGULATORY INFORMATION

All components of this product appear on the domestic substance list.

Hydrofluorosilicic Acid 40%, NSF® - 60 is certified to NSF / ANSI / CAN Standard 60 for fluoridation at a maximum dosage of: 3 mg/L. NSF product use restrictions based on requirements obtained from the NSF website; consult NSF website for current requirements.

SECTION 16. OTHER INFORMATION

Date of latest revision: October 14, 2026

Note: The responsibility to provide a safe workplace remains with the buyer / user. The buyer / user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results and assume no liability for damages incurred by using this material. It is the responsibility of the buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the RDC Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns, please call our customer service center.

References:

NIOSH Pocket Guide to Chemical Hazards; U.S. Department of Health and Human Services, https://www.cdc.gov/niosh/npg/npgd0334.html

WorkSafe BC E-Limit; Workers' Compensation Board of British Columbia, https://elimit.online.worksafebc.com/

ECHA - Registered Substance Dossier; European Chemicals Agency, https://chem.echa.europa.eu/100.037.289/overview

Transportation of Dangerous Goods Regulations; Transport Canada, https://laws-lois.justice.gc.ca/eng/regulations/SOR-2001-286/index.html

Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Seventh revised edition

The ACS Style Guide