

Safety Data Sheet
HYDROFLUOSILICIC ACID SOLUTION

Version 1.5

Revision Date: 10/27/2022

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**Product name** : HYDROFLUOSILICIC ACID SOLUTION**Recommended use of the chemical and restrictions on use**

Recommended use : Reserved for industrial and professional use.

Manufacturer or supplier's details**Company** : Univar Solutions USA, Inc.
Address : 3075 Highland Pkwy Suite 200
Downers Grove, IL 60515
United States of America (USA)**Emergency telephone number:**Transport North America: CHEMTREC (1-800-424-9300)
CHEMTREC INTERNATIONAL Tel # 703-527-3887**Additional Information:** : Responsible Party: Product Compliance Department
E-mail: SDSNA@univarsolutions.com
SDS Requests: 1-855-429-2661
Website: www.univarsolutions.com**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Corrosive to metals : Category 1

Acute toxicity (Oral) : Category 4

Acute toxicity (Dermal) : Category 3

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.Precautionary statements : **Prevention:**
P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

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P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ 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/ doctor.

P362 Take off contaminated clothing and wash before reuse.

P390 Absorb spillage to prevent material damage.

Storage:

P405 Store locked up.

P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

CAS-No.	Chemical name	Weight percent
16961-83-4	Fluorosilicic Acid	20 - 25
7664-39-3	Hydrofluoric acid	0.1 - 1

Actual concentration is withheld as a trade secret

Any Concentration shown as a range is due to batch variation.

Synonyms : HFS; Fluorosilicic Acid; Hydrofluorosilicic Acid,

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Consult a physician.
 Show this safety data sheet to the doctor in attendance.
 Symptoms of poisoning may appear several hours later.
 Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical

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- advice.
If symptoms persist, call a physician.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Take victim immediately to hospital.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
Take victim immediately to hospital.
- If swallowed : Keep respiratory tract clear.
Do not induce vomiting without medical advice.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Carbon dioxide (CO₂)
Foam
Dry powder
Water mist
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : No hazardous combustion products are known
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
- Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Neutralize with chalk, alkali solution or ammonia. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Prevent unauthorized access. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : Do not store near acids.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
7664-39-3	Hydrofluoric acid	TWA	0.5 ppm (Fluorine)	ACGIH
		C	2 ppm (Fluorine)	ACGIH

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		TWA	3 ppm 2.5 mg/m ³	NIOSH REL
		C	6 ppm 5 mg/m ³	NIOSH REL
		TWA	3 ppm	OSHA Z-2
		TWA	3 ppm (Fluorine)	OSHA P0
		STEL	6 ppm (Fluorine)	OSHA P0
		TWA	0.5 ppm (Fluorine)	ACGIH
		C	2 ppm (Fluorine)	ACGIH
		TWA	3 ppm (Fluorine)	OSHA P0
		STEL	6 ppm (Fluorine)	OSHA P0
		PEL	0.4 ppm 0.33 mg/m ³ (Fluorine)	CAL PEL
		STEL	1 ppm 0.83 mg/m ³ (Fluorine)	CAL PEL

Personal protective equipment

Respiratory protection

: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Remarks

: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection

: Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection

: Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

: Avoid contact with skin, eyes and clothing.
When using do not eat or drink.
When using do not smoke.

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Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: Clear, colorless, Straw color
Odour	: pungent
Odour Threshold	: No data available
pH	: 1 - 2
Freezing Point (Melting point/freezing point)	: -20 °C (-4 °F)
Boiling Point (Initial boiling point and boiling range)	: 136 - 163 °C (277 - 325 °F)
Flash point	: does not flash
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: No data available
Relative vapour density	: No data available
Relative density	: 1.2 @ 25 °C (77 °F) Reference substance: (water = 1)
Density	: 10.17 lb/gal @ 20 °C (68 °F)
Solubility(ies) Water solubility	: Miscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available

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SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No dangerous reaction known under conditions of normal use.
- Chemical stability : Stable under normal conditions.
- Possibility of hazardous reactions : No decomposition if stored and applied as directed.
- Conditions to avoid : Keep away from heat, flame, sparks and other ignition sources.
- Incompatible materials : glass
Strong oxidizing agents

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Product:**

- Acute oral toxicity : Acute toxicity estimate: 500.1 mg/kg
- Acute inhalation toxicity : Acute toxicity estimate: 50.01 mg/l
Exposure time: 4 h
Test atmosphere: vapour
- Acute dermal toxicity : Acute toxicity estimate: 500.05 mg/kg

Components:**7664-39-3:**

- Acute oral toxicity : Assessment: The component/mixture is highly toxic after single ingestion.
Remarks: No data available
- Acute inhalation toxicity : LC50 (Rat): 1610 ppm
Assessment: The component/mixture is highly toxic after short term inhalation.
- Acute dermal toxicity : Assessment: The component/mixture is extremely toxic after single contact with skin.
Remarks: No data available

Skin corrosion/irritation**Product:**

Remarks: Extremely corrosive and destructive to tissue.

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Components:**16961-83-4:**

Species: Rat

Result: Causes burns.

7664-39-3:

Species: Rabbit

Result: Causes severe burns.

Serious eye damage/eye irritation**Product:**

Remarks: May cause irreversible eye damage.

Components:**7664-39-3:**

Species: Rabbit

Result: Risk of serious damage to eyes.

Germ cell mutagenicity**Components:****7664-39-3:**

Genotoxicity in vitro

: Test Type: Ames test
Species: Salmonella typhimurium
Result: negative

Genotoxicity in vivo

: Test Type: In vivo micronucleus test
Species: Mouse
Result: negativeGerm cell mutagenicity -
Assessment: Tests on bacterial or mammalian cell cultures did not show
mutagenic effects.**Carcinogenicity****Components:****7664-39-3:**

Species: Rat

NOAEL: 25 mg/kg bw/day

Carcinogenicity - Assess-
ment

: Not classifiable as a human carcinogen.

IARCNo component of this product present at levels greater than or
equal to 0.1% is identified as probable, possible or confirmed
human carcinogen by IARC.**OSHA**No component of this product present at levels greater than or
equal to 0.1% is on OSHA's list of regulated carcinogens.

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NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity**Components:****7664-39-3:**

Reproductive toxicity - Assessment

Fertility classification not possible from current data.

Teratogenicity - Assessment : Embryotoxicity classification not possible from current data.

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****7664-39-3:**

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 97 mg/l
Exposure time: 48 h

Toxicity to algae : Remarks: No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects**Product:**Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S.

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Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-637-7922

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):
UN1778, Fluorosilicic acid, 8, II

IATA (International Air Transport Association):
UN1778, Fluorosilicic acid, 8, II

IMDG (International Maritime Dangerous Goods):
UN1778, FLUOROSILICIC ACID, 8, II

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Hydrofluoric acid	7664-39-3	100	10001
Hydrochloric acid	7647-01-0	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ
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		(lbs)	(lbs)
Hydrofluoric acid	7664-39-3	100	10001
Hydrochloric acid	7647-01-0	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Corrosive to metals
 Acute toxicity (any route of exposure)
 Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

7647-01-0 Hydrochloric acid
 7664-39-3 Hydrofluoric acid

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

7647-01-0 Hydrochloric acid
 7664-39-3 Hydrofluoric acid

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

Massachusetts Right To Know

16961-83-4 Fluorosilicic Acid
 7647-01-0 Hydrochloric acid
 7664-39-3 Hydrofluoric acid

Pennsylvania Right To Know

7732-18-5 Water
 16961-83-4 Fluorosilicic Acid
 7647-01-0 Hydrochloric acid
 7664-39-3 Hydrofluoric acid

California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

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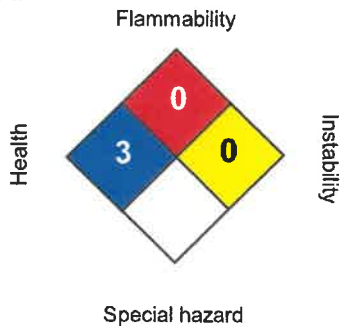
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DSL	: All components of this product are on the Canadian DSL
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3/
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) SDSNA@univarsolutions.com.

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Material number:

16166001, 16176538, 16170213, 16169394, 16171091, 16145665, 16144609, 16151122, 16148601, 16159674, 16166531, 16141271, 16148010, 16150746, 16145666, 16143932, 16147890, 16140484

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ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		