TECHNICAL DATA SHEET

Hydrofluorosilicic Acid 23% ACS

Revised: 04/27/2026

PRODUCT IDENTIFICATION

Product Name: Hydrofluorosilicic Acid 23% ACS
CAS Number: 16961-83-4
Molecular Formula: F_6H_2Si
Molecular Weight: 144.091 g/mol
Grade: ACS Grade
Purity / Concentration: 23%
Synonyms: Fluorosilicic Acid, Hydrofluorosilicic Acid

PRODUCT OVERVIEW

Hydrofluorosilicic Acid 23% ACS is a high-purity, clear liquid reagent essential for precise chemical processing. With a certified assay of 23.1% and strictly controlled impurity levels, such as heavy metals at 0.05 ppm, it is the industry standard for water treatment and synthesis applications.

Grade Significance: ACS Grade signifies that the product meets the stringent purity standards set by the American Chemical Society, ensuring reliability and consistency for critical analytical and industrial applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	23.1	22	24.5	Titration
Color (APHA)	APHA	5	—	10	ASTM D1209
Specific Gravity (20°C)	g/mL	1.182	—	—	USP <841>
Residue After Ignition	%	0.0010	—	0.02	ACS Method
Heavy Metals (as Pb)	ppm	0.05	—	5	ICP-MS
Iron (Fe)	ppm	0.05	—	5	ICP-MS
Chloride (Cl^-)	ppm	0.2	—	5	Ion Chromatography
Sulfate (SO_4^{2-})	ppm	1	—	20	Ion Chromatography

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid	**Odor**	Odorless
Form	Liquid	**Boiling Point**	108°C (226.4°F)
Melting / Freezing Point	-37°C (-34.6°F)	**Specific Gravity**	1.12
Solubility	Miscible with water	**Molecular Formula**	F_6H_2Si
Molecular Weight	144.091 g/mol	**Viscosity (25°C)**	0.5-2.0 cP (typical 1.2 cP at 25°C)
Refractive Index (20°C)	1.38-1.40 (approx.)	**Density (25°C)**	1.200 g/mL

APPLICATIONS

1. **Municipal Water Treatment** — This product is widely utilized to fluoridate drinking water supplies, playing a critical role in public health initiatives to prevent dental cavities.
2. **Chemical Manufacturing** — It serves as a vital precursor in the synthesis of various fluorine-containing compounds required for specialized industrial chemical production.
3. **Water Management** — The acid is employed as an effective agent for adjusting the pH levels of water during complex industrial treatment processes.
4. **Electroplating** — In the metal finishing sector, it is applied to enhance the adherence and overall quality of protective or decorative metal coatings.

STORAGE & HANDLING

Proper storage is critical because this chemical is highly corrosive and toxic, necessitating the use of specialized, acid-resistant containment systems. Maintaining a controlled environment prevents the degradation of the acid and minimizes the risk of hazardous exposure to personnel.

- Store in a cool, dry place away from incompatible materials.
- Use containers made of HDPE or glass to prevent reactions.
- Avoid exposure to light and moisture to maintain product integrity.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.
- Ensure adequate ventilation in storage areas to prevent accumulation of vapors.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Danger

Hazard Statements:

- H314: Causes severe skin burns and eye damage [Danger Skin corrosion/irritation]
- H301: Toxic if swallowed

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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