

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 (Titration)	%	23	22.5	23.5	Titration
Color (APHA/Hazen)	APHA	8	—	200.0	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.2	1.19	1.21	Hydrometer @ 25°C
Arsenic Antimony As As	ppm	≤ 5 ppm	—	—	ICP-MS
Heavy Metals As Pb	ppm	4	0	—	ICP-MS (as Pb)
Iron (Fe)	ppm	≤ 10 ppm	—	—	ICP-MS
Lead Pb	ppm	≤ 5 ppm	—	—	ICP-MS
Chloride Cl	ppm	3	—	10	ICP
Phosphate Po4	ppm	≤ 50 ppm	—	—	ICP
Sulfate So4	ppm	15	—	50	ICP
Fluoride F	ppm	0.76	0	1	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	Not characterized for the 23% solution
Melting / Freezing Point	Not characterized for the 23% solution	Specific Gravity	1.19
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]

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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