

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 chemical solution characterized by its precise concentration and strict impurity limits, such as a maximum of 5 ppm for arsenic and 10 ppm for iron. This clear, colorless liquid is primarily utilized in municipal water treatment and advanced chemical synthesis where consistent, reliable quality is essential.

Grade Significance: The ACS grade designation indicates that this product meets the rigorous purity standards set by the American Chemical Society, ensuring it is suitable for sensitive laboratory and analytical 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 @ 20°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

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 acid is widely used to fluoridate drinking water supplies, which helps prevent dental cavities in the general population.
2. **Chemical Manufacturing** — It serves as a critical precursor for the synthesis of various fluorine-containing compounds used in industrial processes.
3. **Water Management** — The product is utilized for effective pH adjustment in water treatment processes to ensure optimal chemical balance.
4. **Electroplating** — It acts as an additive in electroplating baths to improve the quality, durability, and finish of metal coatings.

STORAGE & HANDLING

Proper storage is critical because this acid is highly corrosive and causes severe skin burns and eye damage. It must be kept in a secure, well-ventilated area to prevent the accumulation of hazardous fumes and to protect personnel from accidental exposure.

- 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:

- H302: Harmful if swallowed
- H311: Toxic in contact with skin
- H314: Causes severe skin burns and eye damage
- H332: Harmful if inhaled
- H335: May cause respiratory irritation
- H402: Harmful to aquatic life
- 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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