TECHNICAL DATA SHEET

Nitric Acid 70% ACS Grade - Low Particle

Revised: 04/27/2026

PRODUCT IDENTIFICATION

Product Name: Nitric Acid 70% ACS Grade - Low Particle
CAS Number: 7697-37-2
Molecular Formula: HNO_3
Molecular Weight: 63.013 g/mol
Grade: ACS Grade
Purity / Concentration: 70%
Synonyms: Aqua Fortis, Nitric Acid Solution

PRODUCT OVERVIEW

Nitric Acid 70% ACS Grade is a high-purity, low-particle oxidizing liquid designed for demanding laboratory and industrial processes. With a certified assay of 70.2% and strictly controlled impurity levels, such as 0.05 ppm iron, this product provides the precision required for analytical and semiconductor applications.

Grade Significance: ACS Grade signifies that the chemical meets or exceeds the high-purity standards set by the American Chemical Society, ensuring reliability for analytical and research-grade applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	70.2	69	71	Titration
Color (APHA)	APHA	5	—	10	ASTM D1209
Specific Gravity (20°C)	g/mL	1.414	—	—	USP <841>
Residue After Ignition	%	0.0003	—	0.0005	Gravimetric
Arsenic (As)	ppm	0.02	—	0.05	ICP-MS
Heavy Metals (as Pb)	ppm	0.1	—	1	ICP-MS
Iron (Fe)	ppm	0.05	—	0.2	ICP-MS
Chloride (Cl^-)	ppm	0.1	—	0.5	ISE
Nitrate (NO_3^-)	ppm	1	—	2	Spectrophotometry
Sulfate (SO_4^{2-})	ppm	0.2	—	1	Turbidimetry

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Colorless to pale yellow liquid	**Odor**	Pungent, acrid odor
Form	Liquid	**Boiling Point**	83°C (181.4°F)
Melting / Freezing Point	-42°C (-43.6°F)	**Specific Gravity**	1.42
Solubility	Soluble in water	**Molecular Formula**	HNO_3
Molecular Weight	63.013 g/mol	**Vapor Pressure (20°C)**	5 mmHg
Viscosity (25°C)	1.2 cP	**Refractive Index (20°C)**	1.37
Density (25°C)	1.41 g/mL	**Partition Coefficient (log P)**	-1.0 (approximate, miscible in water; logP not typically used for strong acids)
Decomposition Temp.	Decomposes on strong heating; no fixed decomposition temperature		

APPLICATIONS

1. **Analytical Chemistry** — Serves as a critical mobile phase component in reversed-phase high-performance liquid chromatography for the accurate separation of complex organic compounds.
2. **Semiconductor Manufacturing** — Utilized in precision etching processes for silicon wafers where low particle counts are essential to prevent microscopic defects.
3. **Chemical Synthesis** — Provides the strong oxidizing conditions necessary for complex chemical reactions and the synthesis of specialized nitrogen-based compounds.
4. **Agricultural Production** — Functions as a high-quality precursor in the manufacturing of fertilizers and various nitrate-based chemical products.

STORAGE & HANDLING

Proper storage is critical because this substance is a powerful oxidizer that can intensify fires and cause severe chemical burns. It must be stored in a cool, well-ventilated area away from incompatible organic materials and reducing agents to prevent hazardous reactions and ensure container integrity.

- Store in a cool, dry, well-ventilated area away from incompatible substances.
- 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 when handling.
- Ensure proper ventilation in storage and usage areas to minimize inhalation risks.

AVAILABLE PACKAGING

- 1 Liter
- 2.5 Liter
- 55 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Danger

Hazard Statements:

- H272: May intensify fire; oxidizer [Danger Oxidizing liquids; Oxidizing solids]
- H314: Causes severe skin burns and eye damage [Danger Skin corrosion/irritation]
- H330: Fatal if inhaled [Danger Acute toxicity, inhalation]
- H271: May cause fire or explosion; strong oxidizer

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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