

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 (Titration)	%	69	68	70	Titration
Color (APHA/Hazen)	APHA	5	—	10	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.413	1.408	1.413	Hydrometer @ 25°C
Residue On Evaporation	ppm	3	—	5	Evaporation
Arsenic (As)	ppm	0.0050	—	0.01	Per specification
Heavy Metals As Pb	ppm	0.1	—	0.5	ICP-MS (as Pb)
Iron (Fe)	ppm	0.09	—	0.3	ICP-MS
Chloride Cl	ppm	0.03	—	0.1	ICP
Sulfate So4	ppm	0.5	—	0.6	ICP

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	Not characterized for the 70% solution
Melting / Freezing Point	Not characterized for the 70% solution	Specific Gravity	1.413
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

- Analytical Chemistry** — Serves as a critical mobile phase component in reversed-phase high-performance liquid chromatography for the accurate separation of complex organic compounds.
- Semiconductor Manufacturing** — Utilized in precision etching processes for silicon wafers where low particle counts are essential to prevent microscopic defects.
- Chemical Synthesis** — Provides the strong oxidizing conditions necessary for complex chemical reactions and the synthesis of specialized nitrogen-based compounds.
- 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]

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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