

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

Alliance Chemical offers high-purity 70% Nitric Acid, ACS Grade, specifically processed for low particle content to meet rigorous laboratory standards. With a low APHA color rating of 6 and trace impurities like iron and heavy metals kept at or below 0.1 ppm, this reagent is ideal for precision chemical synthesis and analytical applications.

Grade Significance: ACS Grade indicates that the chemical meets or exceeds the purity standards set by the American Chemical Society, ensuring reliability and consistency for demanding laboratory and analytical work.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	70	68	70	Titration
Color (APHA/Hazen)	APHA	6	0	10	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.413	1.411	1.415	Hydrometer @ 25°C
Residue On Evaporation	ppm	2	—	5	Evaporation
Arsenic (As)	ppm	ND	—	0.01	Per specification
Heavy Metals As Pb	ppm	0.1	0	0.5	ICP-MS (as Pb)
Iron (Fe)	ppm	0.1	0	0.3	ICP-MS
Chloride Cl	ppm	ND	—	0.1	ICP
Sulfate SO_4	ppm	ND	—	0.6	ICP

Values based on 2 batches tested. ND = Not Detected.

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

1. **Analytical Chemistry** — Used as a high-purity mobile phase component in reversed-phase HPLC to effectively separate complex organic compounds.
2. **Semiconductor Manufacturing** — Utilized in precision etching processes for silicon wafers where low particle counts are critical to preventing surface defects.
3. **Chemical Synthesis** — Serves as a potent oxidizing agent in various complex reactions requiring high-purity, standardized reagents.
4. **Agriculture** — Acts as a primary precursor in the production of specialized nitrates and high-quality fertilizers.
5. **Laboratory Research** — Employed in critical cleaning and digestion procedures where metallic contaminants must be kept below detectable limits.

STORAGE & HANDLING

Proper storage is essential because nitric acid is a strong oxidizer that can intensify fires and is highly corrosive to metals and respiratory tissue. It must be stored in a cool, ventilated area away from incompatible materials to prevent dangerous chemical reactions and container degradation.

- 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:

- EUH071: Corrosive to the respiratory tract
- H272: May intensify fire; oxidiser
- H290: May be corrosive to metals
- H314: Causes severe skin burns and eye damage
- H331: Toxic if inhaled
- 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.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com

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