TECHNICAL DATA SHEET

Nitric Acid 65%ACS Grade

Revised: 07/22/2026

PRODUCT IDENTIFICATION

Product Name: Nitric Acid 65%ACS Grade
CAS Number: 7697-37-2
Molecular Formula: HNO_3
Molecular Weight: 63.013 g/mol
Grade: ACS Grade
Purity / Concentration: 65%
Synonyms: Nitric Acid Solution, Aqueous Nitric Acid

PRODUCT OVERVIEW

Nitric Acid 65% ACS Grade is a high-purity aqueous solution characterized by its low impurity profile, including sulfate levels of 0.2 ppm and iron content of 0.1 ppm. This colorless to pale yellow liquid is an essential reagent for precise analytical applications and industrial manufacturing processes.

Grade Significance: ACS Grade signifies that this product meets the rigorous 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)	%	64	64	70	Titration
Color (APHA/Hazen)	APHA	23	—	25	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.4105	1.408	1.413	Hydrometer @ 25°C
Residue On Evaporation	ppm	0.6	—	2	Evaporation
Arsenic (As)	ppm	0.0030	—	0.01	Per specification
Heavy Metals As Pb	ppm	0.15	—	0.5	ICP-MS (as Pb)
Iron (Fe)	ppm	3	—	5	ICP-MS
Chloride Cl	ppm	0.015	—	0.05	ICP
Sulfate So4	ppm	1.94	—	3	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 65% solution
Melting / Freezing Point	Not characterized for the 65% solution	**Specific Gravity**	1.391
Solubility	Soluble in water, alcohol, and ether	**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)**	1.36
Density (25°C)	1.41 g/mL	**Partition Coefficient (log P)**	-0.5 to -0.3
Decomposition Temp.	No definite decomposition below 100°C; decomposes on heating		

APPLICATIONS

1. **Analytical Chemistry** — Functions as a critical mobile phase component in reversed-phase high-performance liquid chromatography to facilitate the separation of organic compounds.
2. **Agriculture** — Utilized in the synthesis of high-grade nitrates which serve as fundamental building blocks for specialized fertilizers.
3. **Defense and Mining** — Employed in the chemical production of nitrate-based energetic materials and explosives.
4. **Metalworking** — Acts as a potent etching agent for intricate metal surface treatment and manufacturing processes.
5. **Environmental Services** — Used effectively for precise pH adjustment and neutralization within industrial wastewater treatment systems.

STORAGE & HANDLING

Due to its status as a strong oxidizer and corrosive agent, this acid must be stored in a cool, well-ventilated area away from incompatible organic materials to prevent fire hazards. Proper containment is essential to mitigate the risk of severe skin burns and the release of toxic vapors.

- Store in a cool, dry, well-ventilated area away from incompatible substances.
- Use materials compatible with nitric acid, such as HDPE or glass containers.
- Avoid contact with reducing agents, organic materials, and bases.
- Protect from light and moisture to maintain stability.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.

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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