

PRODUCT IDENTIFICATION



Product Name: Nitric Acid 25% Technical Grade
CAS Number: 7697-37-2
Molecular Formula: HNO_3
Molecular Weight: 63.013 g/mol
Grade: Technical Grade
Purity / Concentration: 25%
Synonyms: Nitric Acid Solution, Aqueous Nitric Acid

PRODUCT OVERVIEW

Nitric Acid 25% Technical Grade is a versatile, high-purity aqueous solution ideal for industrial chemical processing. With a verified concentration of 24.9667% and low trace impurities, this product is engineered for consistent performance in oxidizing and pH-adjustment applications.

Grade Significance: Technical Grade signifies that this product is formulated for industrial and manufacturing utility where efficiency and reliability are required, rather than for pharmaceutical or food-grade applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	24.9667	24	26	Titration
Color (APHA/Hazen)	APHA	38.3333	0	70	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.1479	1.146	1.15	Hydrometer @ 25°C
Non-Volatile Residue	%	ND	0	0.01	Residue on Ignition
Iron (Fe)	ppm	3	0	5	ICP-MS
Chloride Cl	ppm	1.086	0	36.23	ICP

Values based on 4 batches tested. ND = Not Detected.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Colorless to slightly yellow, fuming liquid	Odor	Pungent, acrid odor
Form	Liquid	Boiling Point	Not characterized for the 25% solution
Melting / Freezing Point	Not characterized for the 25% solution	Specific Gravity	1.147
Solubility	Soluble in water, alcohol, and other polar solvents	Molecular Formula	HNO_3
Molecular Weight	63.013 g/mol	Vapor Pressure (20°C)	45 mmHg
Viscosity (25°C)	0.89 cP	Refractive Index (20°C)	1.335
Density (25°C)	1.13 g/mL		

APPLICATIONS

1. **Metalworking** — Used extensively in metal etching processes to clean, texture, or remove material from surfaces with high precision.
2. **Semiconductors** — Acts as a critical component for surface preparation and etching silicon wafers during the manufacturing of electronic components.
3. **Water Treatment** — Employed as a reliable acidulant to effectively adjust pH levels in industrial water systems.
4. **Agriculture** — Serves as a fundamental reagent in the chemical synthesis of various nitrate-based fertilizers.
5. **Chemical Manufacturing** — Functions as a powerful oxidizing agent to facilitate various complex chemical reactions in large-scale synthesis.

STORAGE & HANDLING

Proper storage is critical because this solution is highly corrosive to metals and poses severe risks of skin and eye burns upon contact. Containers must be kept in a cool, well-ventilated area to prevent the buildup of fumes and to maintain the integrity of the chemical composition.

- Store in a cool, dry, well-ventilated area away from incompatible materials.
- Use corrosion-resistant containers (e.g., HDPE, glass).
- Avoid contact with reducing agents and organic materials.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.
- Ensure proper ventilation when handling to avoid inhalation of vapors.

AVAILABLE PACKAGING

- 1 Liter
- 2.5 Liter
- 55 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Danger**



Hazard Statements:

- H290: May be corrosive to metals
- H314: Causes severe skin burns and eye damage
- H332: Harmful 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.

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