

PRODUCT IDENTIFICATION

**Product Name:** Nitric Acid 20% Technical Grade**CAS Number:** 7697-37-2**Molecular Formula:** HNO_3 **Molecular Weight:** 63.013 g/mol**Grade:** Technical Grade**Purity / Concentration:** 20%**Synonyms:** Nitric Acid Solution, Aqueous Nitric Acid

PRODUCT OVERVIEW

Nitric Acid 20% Technical Grade is a versatile, aqueous solution characterized by its high purity, featuring low trace metal content such as 0.9 ppm Iron and 0.87 ppm Chloride. This clear, colorless liquid serves as a reliable oxidizing agent and pH adjuster across a variety of industrial and laboratory settings.

Grade Significance: Technical Grade indicates that this product is manufactured for general industrial use where high performance is required, offering an ideal balance of quality and cost-effectiveness.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	20	19.5	20.5	Titration
Color (APHA/Hazen)	APHA	15	—	70	Spectrophotometry
Non-Volatile Residue	%	0.0030	—	0.01	Residue on Ignition
Iron (Fe)	ppm	0.9	0	3	ICP-MS
Chloride Cl	ppm	0.87	0	2.9	ICP

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless to slightly yellow liquid	Odor	Pungent, acrid odor
Form	Liquid	Boiling Point	Not characterized for the 20% solution
Melting / Freezing Point	Not characterized for the 20% solution	Specific Gravity	1.117
Solubility	Miscible with water and most organic solvents	Molecular Formula	HNO_3
Molecular Weight	63.013 g/mol	Vapor Pressure (20°C)	5 mmHg
Viscosity (25°C)	1.1 cP	Refractive Index (20°C)	1.335
Density (25°C)	1.086 g/mL	Decomposition Temp.	Decomposes on heating; no fixed bp

APPLICATIONS

1. **Electronics Manufacturing** — Used in the precise etching of metals for the production of high-quality printed circuit boards.
2. **Water Treatment** — Serves as an effective chemical agent for adjusting the pH levels of industrial and municipal water systems.
3. **Chemical Synthesis** — Functions as a robust oxidizing agent to facilitate various chemical reactions and complex synthesis processes.
4. **Laboratory Research** — Commonly utilized in analytical procedures where a standardized, reliable concentration of nitric acid is required.

STORAGE & HANDLING

Proper storage is critical because this solution is corrosive to metals and poses severe risks for skin and eye damage. Containers must be kept in a secure, well-ventilated area away from incompatible materials to prevent hazardous reactions and ensure workplace safety.

- Store in a cool, dry, well-ventilated area away from incompatible materials.
- Use containers made of HDPE or glass to prevent reactions.
- Avoid exposure to light and heat to maintain stability.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.
- Ensure adequate 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.

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

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