

PRODUCT IDENTIFICATION



Product Name: Hydrochloric Acid 5% Technical Grade

CAS Number: 7647-01-0

Molecular Formula: ClH

Molecular Weight: 36.46 g/mol

Grade: Technical Grade

Purity / Concentration: 5%

Synonyms: Hydrochloric Acid Solution, Muriatic Acid

PRODUCT OVERVIEW

Alliance Chemical offers 5% Technical Grade Hydrochloric Acid, a reliable, clear, and colorless liquid solution. With a precise assay of 5.04% and minimal impurities like iron and heavy metals, this product is ideal for pH adjustment and industrial cleaning applications.

Grade Significance: Technical Grade indicates that this product is manufactured for general industrial and commercial use where high chemical utility is required but pharmaceutical or food-grade purity is not necessary.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	5.04	4.5	5.5	Titration
Color (APHA/Hazen)	APHA	2.5	0	10	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.0228	1.0208	1.0248	Hydrometer @ 20°C
Residue On Evaporation	ppm	10	0	50	Evaporation
Heavy Metals As Pb	ppm	0.0134	0	1	ICP-MS (as Pb)
Iron (Fe)	ppm	0.0134	0	1	ICP-MS
Sulfate So4	ppm	0.14	0	2.7	ICP
Sulfite So3	ppm	0.07	0	9.46	ICP

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid	Odor	Pungent, acrid odor
Form	Liquid	Boiling Point	Not characterized for the 5% solution
Melting / Freezing Point	Not characterized for the 5% solution	Specific Gravity	1.025
Solubility	Soluble in water and organic solvents	Molecular Formula	ClH
Molecular Weight	36.46 g/mol	Vapor Pressure (20°C)	20 mmHg
Viscosity (25°C)	0.89 cP	Refractive Index (20°C)	1.332
Density (25°C)	1.01 g/mL		

APPLICATIONS

1. **Water Treatment** — Used effectively to lower the pH levels of water in municipal and industrial treatment processes to ensure compliance and safety.
2. **Metalworking** — Utilized as a pickling agent to clean metal surfaces by removing oxides, rust, and other surface impurities before further processing.
3. **Laboratory Research** — Serves as a standard reagent for various chemical reactions, titrations, and analytical procedures requiring a diluted acid source.
4. **Chemical Manufacturing** — Acts as a foundational chemical component for synthesis and pH control in diverse industrial manufacturing workflows.

STORAGE & HANDLING

Due to its corrosive nature, this acid must be stored in a cool, well-ventilated area in compatible, corrosion-resistant containers. Proper storage is essential to prevent damage to surrounding metal infrastructure and to mitigate the risk of respiratory irritation from vapors.

- Store in a cool, dry place away from direct sunlight.
- Use corrosion-resistant containers (e.g., HDPE or glass).
- Avoid contact with incompatible materials such as strong bases and oxidizers.
- Ensure proper ventilation in storage areas to prevent vapor accumulation.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 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
- H335: May cause respiratory irritation

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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