

PRODUCT IDENTIFICATION



Product Name: Hydrochloric Acid 37% ACS Reagent Grade

CAS Number: 7647-01-0

Molecular Formula: ClH

Molecular Weight: 36.46 g/mol

Grade: Reagent Grade

Purity / Concentration: 37%

Synonyms: Hydrochloric Acid 37%, Muriatic Acid 37%

PRODUCT OVERVIEW

Alliance Chemical offers high-purity Hydrochloric Acid 37% ACS Reagent Grade, a clear and colorless solution essential for precise laboratory and industrial applications. With an assay of 37.33% and stringent trace metal limits, this reagent grade acid provides the reliability required for sensitive analytical and synthesis processes.

Grade Significance: Reagent Grade indicates that the chemical meets or exceeds the strict purity standards set by the American Chemical Society, ensuring consistent results for analytical and research-grade work.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	37.33	36.5	37.5	Titration
Color (APHA/Hazen)	APHA	5	0	10	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.185	1.183	1.187	Hydrometer @ 20°C
Residue On Evaporation	ppm	3	0	50	Evaporation
Aluminum Al	ppm	0.3	0	1	ICP-MS
Arsenic Antimony As As	ppm	0.0005	0	0.0050	ICP-MS
Calcium Ca	ppm	0.3	0	1	ICP-MS
Chromium Cr	ppm	0.15	0	0.5	ICP-MS
Cobalt Co	ppm	0.03	0	0.1	ICP-MS
Copper Cu	ppm	0.03	0	0.1	ICP-MS
Heavy Metals As Pb	ppm	0.03	0	0.1	ICP-MS (as Pb)
Iron (Fe)	ppm	0.1	0	0.2	ICP-MS
Lead Pb	ppm	0.15	0	0.5	ICP-MS
Magnesium Mg	ppm	0.3	0	1	ICP-MS
Manganese Mn	ppm	0.3	0	1	ICP-MS
Nickel Ni	ppm	0.03	0	0.1	ICP-MS
Potassium K	ppm	0.3	0	1	ICP-MS
Sodium Na	ppm	0.3	0	1	ICP-MS
Zinc Zn	ppm	0.3	0	1	ICP-MS
Phosphate Po4	ppm	0.015	0	0.05	ICP
Sulfate So4	ppm	0.25	0	0.5	ICP
Barium Ba	ppm	0.3	0	1	ICP-MS
Boron B	ppm	0.01	0	0.1	ICP-MS
Cadmium Cd	ppm	0.3	0	1	ICP-MS
Free Halogen As Cl2	ppm	1.5	0	5	Titration
Silicon Si	ppm	0.3	0	1	ICP-MS
Silver Ag	ppm	0.03	0	0.1	ICP-MS
Strontium Sr	ppm	0.3	0	1	ICP-MS
Sulfite So3	ppm	0.5	0	0.8	ICP
Tin Sn	ppm	0.3	0	1	ICP-MS

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless corrosive liquid	Odor	Pungent, irritating odor
Form	Liquid	Boiling Point	Not characterized for the 37% solution
Melting / Freezing Point	Not characterized for the 37% solution	Flash Point	Does not apply
Specific Gravity	1.19	Solubility	Fully miscible with water, most 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)	1.334	Density (25°C)	1.19 g/mL
Decomposition Temp.	Not decomposed at moderate temperatures; decomposes upon strong heating		

APPLICATIONS

1. **Analytical Chemistry** — This product serves as a foundational reagent for precise titrations and complex chemical analysis where high purity is critical.
2. **Pharmaceutical Manufacturing** — It acts as a key reagent in the synthesis of diverse pharmaceutical compounds, ensuring consistent reaction quality.
3. **Water Treatment** — Hydrochloric acid is used to effectively adjust pH levels in water treatment systems to maintain regulatory compliance and water quality.
4. **Metal Processing** — The acid is utilized for cleaning metal surfaces and the efficient removal of oxides prior to further manufacturing steps.

STORAGE & HANDLING

Proper storage is essential to mitigate the corrosive nature of this acid, which can damage metal containers and storage infrastructure. It must be kept in a cool, well-ventilated area in secondary containment to prevent exposure to skin and eyes, as it is classified as a severe skin and respiratory hazard.

- Store in a cool, dry, well-ventilated area away from incompatible materials.
- Use corrosion-resistant containers (e.g., HDPE, glass) for storage.
- Avoid contact with metals, bases, and organic materials.
- Ensure proper personal protective equipment (PPE) is worn, including gloves and goggles.
- Keep container tightly closed when not in use to prevent moisture absorption.

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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