

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

Hydrochloric Acid 37% ACS Reagent Grade is a high-purity, clear, colorless liquid essential for precise laboratory and industrial applications. With a verified assay of 37.33% and extremely low trace metal content, such as arsenic and antimony levels below 0.0005 ppm, this product ensures consistency in sensitive chemical processes.

Grade Significance: Reagent Grade certification guarantees that the chemical meets or exceeds the strict purity standards set by the American Chemical Society, providing users with the reliability needed for analytical and scientific accuracy.

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. **Pharmaceuticals** — Acts as a critical reagent in the synthesis of complex pharmaceutical compounds, requiring the high purity standards of ACS Reagent Grade.
2. **Water Treatment** — Utilized for precise pH adjustment in municipal and industrial water systems to ensure optimal chemical balance.
3. **Metal Processing** — Employed for metal cleaning and oxide removal, effectively preparing surfaces for subsequent manufacturing steps.
4. **Analytical Chemistry** — Serves as a fundamental reagent for laboratory titrations and standardized analytical testing where accuracy is paramount.

STORAGE & HANDLING

Due to its corrosive nature, this acid must be stored in a cool, well-ventilated area in its original, chemically compatible containers. Proper storage prevents the release of hazardous vapors and minimizes the risk of structural damage to facility infrastructure.

- 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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