

PRODUCT IDENTIFICATION



Product Name: Ammonium Hydroxide 29% ACS Grade

CAS Number: 1336-21-6

Molecular Formula: H_5NO

Molecular Weight: 35.046 g/mol

Grade: ACS Grade

Purity / Concentration: 29%

Synonyms: Aqueous Ammonia, Ammonium Hydroxide Solution

PRODUCT OVERVIEW

Ammonium Hydroxide 29% ACS Grade is a high-purity, volatile alkaline solution essential for precise laboratory and industrial applications. With a strictly controlled impurity profile, including residue on evaporation at just 5 ppm, this reagent ensures reliable performance in sensitive chemical processes.

Grade Significance: ACS Grade signifies that this product meets the rigorous purity standards set by the American Chemical Society, ensuring it is suitable for demanding analytical and laboratory use where minimal impurities are required.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	29	28.5	29.5	Titration
Specific Gravity (20°C)	g/mL	0.895	0.893	0.897	Hydrometer @ 20°C
Residue On Evaporation	ppm	5	—	20	Evaporation
Arsenic As	ppm	0.0050	0	0.01	ICP-MS
Copper Cu	ppm	0.2	0	0.5	ICP-MS
Heavy Metals As Pb	ppm	0.05	0	0.5	ICP-MS (as Pb)
Lead Pb	ppm	0.2	0	0.5	ICP-MS
Manganese Mn	ppm	0.2	0	0.5	ICP-MS
Sodium Na	ppm	2	0	5	ICP-MS
Chloride (Cl^-)	ppm	ND	0	1	Ion chromatography
Nitrate (NO_3^-)	ppm	1	0	2	Per specification
Sulfate (SO_4^{2-})	ppm	1	0	2	Ion chromatography

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless, volatile alkaline liquid	Odor	Pungent ammonia odor
Form	Liquid	Boiling Point	Not characterized for the 29% solution
Melting / Freezing Point	Not characterized for the 29% solution	Flash Point	Not applicable
Specific Gravity	0.9	Solubility	Complete water miscibility
Molecular Formula	H ₅ NO	Molecular Weight	35.046 g/mol
Vapor Pressure (20°C)	33 mmHg	Viscosity (25°C)	0.89 cP
Refractive Index (20°C)	1.333	Density (25°C)	0.897 g/mL
Decomposition Temp.	Not applicable (stable under recommended storage conditions)		

APPLICATIONS

1. **Water Treatment** — Used as a pH adjustment agent to neutralize acidity and maintain optimal water quality standards in municipal and industrial systems.
2. **Pharmaceutical Manufacturing** — Acts as a critical precursor and reagent in the synthesis of complex active pharmaceutical ingredients and chemical intermediates.
3. **Analytical Chemistry** — Serves as a high-purity reagent for complexometric titrations and various quantitative analytical procedures requiring consistent chemical standards.
4. **Industrial Cleaning** — Utilized in specialized formulations for heavy-duty degreasing and surface preparation due to its effective alkaline cleaning properties.

STORAGE & HANDLING

Ammonium Hydroxide is highly volatile and must be stored in a cool, well-ventilated area to prevent pressure buildup in containers. Because it is corrosive to certain metals and causes severe skin and eye damage, proper containment is critical to ensuring workplace safety and preventing accidental exposure.

- Store in a cool, 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 minimize inhalation exposure.

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
- H302: Harmful if swallowed
- H314: Causes severe skin burns and eye damage
- H335: May cause respiratory irritation
- H400: Very toxic to aquatic life

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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