

### PRODUCT IDENTIFICATION



**Product Name:** Ammonium Hydroxide 29% Technical Grade

**CAS Number:** 1336-21-6

**Molecular Formula:** H<sub>5</sub>NO

**Molecular Weight:** 35.046 g/mol

**Grade:** Technical Grade

**Purity / Concentration:** 29%

**Synonyms:** Aqueous Ammonia, Ammonia Solution

### PRODUCT OVERVIEW

Alliance Chemical's Ammonium Hydroxide 29% Technical Grade is a clear, colorless liquid widely used for pH adjustment and chemical synthesis. This technical grade solution typically assays at 29.5% concentration, with low levels of impurities such as carbonate (0.5%). It is commonly used in water treatment and various industrial processes.

**Grade Significance:** Technical Grade Ammonium Hydroxide 29% is suitable for industrial applications where high purity is not a primary requirement. While it meets defined specifications, it may contain trace impurities that do not affect its performance in most technical applications.

### CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	29.5	28	30	Titration
Iron	ppm	5	0	10	ICP
Chloride (Cl <sup>-</sup> )	ppm	26	0	50	Ion chromatography
Sulfate (SO <sub>4</sub> <sup>2-</sup> )	ppm	34	0	50	Ion chromatography
Carbonate	%	0.5	0	1	Titration

Values based on 2 batches tested. ND = Not Detected.

### PHYSICAL & CHEMICAL PROPERTIES

<b>Appearance</b>	Clear, colorless liquid	<b>Odor</b>	Strong ammonia odor
<b>Form</b>	Liquid	<b>Boiling Point</b>	38°C (100°F)
<b>Flash Point</b>	11°C (52°F)	<b>Specific Gravity</b>	0.88
<b>Solubility</b>	Soluble in water	<b>Molecular Formula</b>	H <sub>5</sub> NO
<b>Molecular Weight</b>	35.046 g/mol	<b>Vapor Pressure (20°C)</b>	33 mmHg
<b>Viscosity (25°C)</b>	0.89 cP	<b>Refractive Index (20°C)</b>	1.333
<b>Density (25°C)</b>	0.897 g/mL	<b>Partition Coefficient (log-1.38 P)</b>	
<b>Decomposition Temp.</b>	Not decomposing up to 100°C		

## APPLICATIONS

- 1. Water Treatment** — Ammonium Hydroxide is used to adjust the pH of water in municipal and industrial water treatment facilities. Precise pH control is crucial for effective disinfection and corrosion prevention.
- 2. Cleaning** — This solution is effective in removing grease, grime, and certain types of stains from surfaces. Its alkaline nature helps to saponify fats and oils, making them water-soluble and easier to remove.
- 3. Chemical Synthesis** — Ammonium Hydroxide serves as a reagent in the synthesis of various chemicals, including pharmaceuticals, dyes, and other specialty chemicals. The controlled reactivity of the solution allows for specific chemical transformations.
- 4. Agriculture** — It is utilized in the production of nitrogen-based fertilizers, providing a readily available source of nitrogen for plant growth. Careful control of the ammonium hydroxide concentration is essential for optimal fertilizer production.
- 5. Metal Processing** — Ammonium Hydroxide is used in various metal processing applications, including etching and cleaning. The solution helps to remove oxides and other surface contaminants, preparing the metal for further processing.
- 6. Laboratory** — Used as a common reagent for a variety of applications, including titrations, pH adjustments, and qualitative analysis. The consistent quality of the technical grade ensures reliable results.

## STORAGE & HANDLING

Proper storage of Ammonium Hydroxide 29% is crucial to maintain its concentration and prevent the buildup of pressure due to ammonia gas release. It should be stored in a cool, well-ventilated area, away from incompatible materials, to minimize the risk of hazardous fumes and potential container rupture, given its corrosive nature (H314).

- 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 risks.

## 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:

- H314: Causes severe skin burns and eye damage [Danger Skin corrosion/irritation]
- H400: Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

**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](http://www.alliancechemical.com)

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