

PRODUCT IDENTIFICATION



Product Name: Sodium Hydroxide 25% ACS Grade

CAS Number: 1310-73-2

Molecular Formula: HNaO

Molecular Weight: 39.997 g/mol

Grade: ACS Grade

Purity / Concentration: 25%

Synonyms: Caustic Soda, Lye

PRODUCT OVERVIEW

Alliance Chemical's Sodium Hydroxide 25% ACS Grade is a clear, colorless, viscous liquid solution, typically with an assay of 25.1%. As a strong base, it is primarily used to neutralize acidic solutions and in the production of various chemicals. Its ACS grade signifies high purity, making it suitable for critical applications.

Grade Significance: ACS Grade Sodium Hydroxide 25% signifies that the product meets or exceeds the purity standards set by the American Chemical Society (ACS). This ensures reliability and accuracy in analytical and research applications where high-purity reagents are essential.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	25.1	24.5	25.5	Titration
Color (APHA)	APHA	10	—	10	ASTM D1209
Specific Gravity (20°C)	g/mL	1.274	—	—	USP <841>
Heavy Metals (as Pb)	ppm	0.1	—	1	ICP-MS
Iron (Fe)	ppm	0.1	—	1	ICP-MS
Chloride (Cl ⁻)	ppm	1	—	5	Ion Chromatography
Phosphate (PO ₄ ³⁻)	ppm	0.1	—	1	Spectrophotometry
Sulfate (SO ₄ ²⁻)	ppm	1	—	5	Ion Chromatography
Carbonate Na ₂ CO ₃	%	0.05	—	0.1	Titration
Nitrogen Compounds As N	ppm	0.2	—	5	Spectrophotometry
Silicate SiO ₂	ppm	1	—	10	Spectrophotometry

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless viscous liquid solution	Odor	Odorless
Form	Liquid	Boiling Point	1388°C (2530°F)
Melting / Freezing Point	323°C (613°F)	Specific Gravity	1.275
Solubility	Completely soluble in water, alcohol mixtures	Molecular Formula	HNaO
Molecular Weight	39.997 g/mol	Viscosity (25°C)	1.0 cP
Refractive Index (20°C)	1.335	Density (25°C)	1.2 g/mL
Partition Coefficient (log P)	-1.9 (approximation for NaOH solution, highly ionic)	Decomposition Temp.	> 300°C (decomposes upon strong heating)

APPLICATIONS

- 1. Water Treatment** — Used to neutralize acidic water and maintain optimal pH levels in various water treatment processes, ensuring water quality meets regulatory standards.
- 2. Chemical Manufacturing** — Serves as a strong base in the production of various chemicals, including soaps, detergents, and pharmaceuticals, requiring a high-purity reagent.
- 3. Industrial Cleaning** — Utilized in the formulation of industrial cleaning products for its ability to dissolve organic materials, effectively removing tough stains and residues.
- 4. Laboratory Analysis** — Commonly used as a reagent in titration and other analytical procedures, where its consistent concentration and purity are crucial for accurate results.
- 5. Textile Industry** — Used in textile processing for scouring, bleaching, and mercerizing cotton, contributing to the desired texture and finish of fabrics.
- 6. Pulp and Paper Industry** — Employed in the pulping process to delignify wood and adjust pH levels, essential for producing high-quality paper products.

STORAGE & HANDLING

Proper storage is crucial to maintain the integrity and concentration of Sodium Hydroxide 25% solution. It should be stored in tightly sealed, alkali-resistant containers in a cool, dry, and well-ventilated area, away from incompatible materials. Given its corrosive nature (H314), preventing leaks and spills is essential for safety.

- Store in a cool, dry place away from incompatible materials such as acids and organic compounds.
- Use containers made of HDPE or glass to prevent reactions with metals.
- Ensure proper ventilation in storage areas to avoid accumulation of vapors.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles when handling.
- Avoid exposure to moisture and direct sunlight to maintain product integrity.

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]

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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