

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 offers high-purity Sodium Hydroxide 25% ACS Grade, a clear and viscous caustic solution formulated for rigorous laboratory and industrial standards. With precise control over impurities like iron at 1 ppm and chloride at 9 ppm, this solution provides the reliability required for sensitive analytical and manufacturing processes.

Grade Significance: ACS Grade signifies that the chemical meets the strict purity standards set by the American Chemical Society, ensuring it is suitable for demanding laboratory and analytical applications where precision is paramount.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	25	24.5	25.5	Titration
Calcium Ca	ppm	20	0	50	ICP-MS
Iron	ppm	1	0	2	ICP
Magnesium Mg	ppm	10	0	20	ICP-MS
Nickel Ni	ppm	3	0	10	ICP-MS
Potassium K	%	0.012	0	0.02	ICP-MS
Chloride (Cl ⁻)	ppm	9	0	50	Ion chromatography
Phosphate Po4	ppm	5	0	10	ICP
Sulfate (SO ₄ ²⁻)	ppm	8	0	20	Ion chromatography
Carbonate	%	0.03	0	0.1	Titration
Mercury Hg	ppm	0.3	0	1	ICP-MS
Nitrogen	ppm	5	0	10	Kjeldahl / Chemiluminescence

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	Not characterized for the 25% solution
Melting / Freezing Point	Not characterized for the 25% solution	Specific Gravity	1.27
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** — This product is used to neutralize acidic water sources and maintain optimal pH levels during municipal and industrial treatment cycles.
- 2. Chemical Manufacturing** — Acts as a potent base in the synthesis of various chemicals, serving as a foundational ingredient in the production of soaps and detergents.
- 3. Industrial Cleaning** — Utilized in heavy-duty cleaning formulations for its exceptional ability to break down and dissolve organic materials and stubborn residues.
- 4. Analytical Laboratory** — Functions as a critical reagent in titration procedures and other analytical chemistry applications requiring high-purity standards.

STORAGE & HANDLING

Sodium Hydroxide is highly corrosive to metals and human tissue, necessitating storage in chemically compatible containers such as high-density polyethylene. Proper containment is essential to prevent severe skin burns and eye damage while maintaining the product's concentration integrity by avoiding atmospheric carbon dioxide absorption.

- 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:

- H290: May be corrosive to metals
- H314: Causes severe skin burns and eye damage

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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