

PRODUCT IDENTIFICATION



Product Name: Sodium Hydroxide 50% Solution ACS Grade

CAS Number: 1310-73-2

Molecular Formula: HNaO

Molecular Weight: 39.997 g/mol

Grade: ACS Grade

Purity / Concentration: 50%

Synonyms: Caustic Soda, Lye

PRODUCT OVERVIEW

Alliance Chemical offers high-purity Sodium Hydroxide 50% Solution, an ACS Grade reagent essential for precise laboratory and industrial applications. This clear, colorless liquid is characterized by strict impurity limits, including a very low iron content of 0.9 ppm and a verified 50% assay concentration, making it a reliable choice for critical chemical processes.

Grade Significance: ACS Grade signifies that this product meets the rigorous specifications set by the American Chemical Society, ensuring it is suitable for demanding laboratory and analytical work where impurity levels must be strictly controlled.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	50	49.5	50.5	Titration
Calcium Ca	ppm	20	0	50	ICP-MS
Iron	ppm	0.9	0	3	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	17	0	100.0	Ion chromatography
Phosphate Po4	ppm	5	0	10	ICP
Sulfate (SO ₄ ²⁻)	ppm	16	0	40	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 liquid	Odor	Odorless
Form	Liquid	Boiling Point	Not characterized for the 50% solution
Melting / Freezing Point	Not characterized for the 50% solution	Specific Gravity	1.53
Solubility	Highly soluble in water and alcohol	Molecular Formula	HNaO
Molecular Weight	39.997 g/mol	Viscosity (25°C)	1.0
Refractive Index (20°C)	1.390	Density (25°C)	1.52 g/mL
Decomposition Temp.	Not applicable under normal conditions		

APPLICATIONS

1. **Water Treatment** — Used to effectively raise the pH of acidic water streams, ensuring compliance with environmental standards and protecting infrastructure from corrosion.
2. **Chemical Manufacturing** — Serves as a fundamental reactant in the synthesis of diverse chemical compounds where high purity is required to prevent side reactions.
3. **Personal Care and Soap Production** — Utilized in the saponification process to convert fats and oils into high-quality soap products through precise chemical reaction.
4. **Analytical Chemistry** — Functions as a standard reagent for titrations and other analytical procedures where the absence of impurities like heavy metals is vital for accurate data.

STORAGE & HANDLING

Sodium Hydroxide is highly corrosive to both skin and various metals, necessitating storage in compatible, chemically resistant containers. Proper containment is essential to prevent dangerous reactions and environmental release, ensuring the safety of facility personnel.

- Store in a cool, dry place away from incompatible materials.
- Use HDPE or glass containers for storage.
- Avoid contact with acids and organic materials.
- Ensure proper ventilation when handling to avoid inhalation of vapors.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.

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.

Disclaimer: The information contained herein is believed to be accurate and represents the best information currently available to us. However, Alliance Chemical makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.