

TECHNICAL DATA SHEET

Sodium Hydroxide 25% ACS Grade

ACS Grade · 25%

CAS NUMBER	ALLIANCE CODE	GENERATED
1310-73-2	sodium-hydroxide-25-accs-grade	2026-07-17

1. IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Sodium Hydroxide 25% ACS Grade	sodium-hydroxide-25-accs-grade
GRADE	CONCENTRATION
ACS Grade	25%
CAS NUMBER	FORMULA
1310-73-2 PubChem	HNaO PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
39.997 PubChem	solution

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE ACS Grade	25%	—	current
—	50%	—	sodium-hydroxide-50-membrane-grade-caustic-soda-lye
ACS Grade	50%	—	sodium-hydroxide-50-solution-accs-grade
—	25%	—	sodium-hydroxide-25
—	—	—	sodium-hydroxide-10-accs-grade

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
—	—	—	sodium-hydroxide-10-technical-grade
—	—	—	sodium-hydroxide-15-acs-grade
—	—	—	sodium-hydroxide-15-technical-grade
—	—	—	sodium-hydroxide-20-acs-grade
—	—	—	sodium-hydroxide-20-technical-grade
—	—	—	sodium-hydroxide-30-acs-grade
—	—	—	sodium-hydroxide-30-technical-grade
—	—	—	sodium-hydroxide-5-acs-grade

Typical assay shown is the rolling-window mean from the sibling product's most recent lots. Grade selection drives downstream end-use — verify the sibling grade matches your specification before substitution.

PHYSICAL & CHEMICAL PROPERTIES

One or more physical-property values are temporarily suppressed pending verification against vendor COA data. For complete properties refer to the Safety Data Sheet (SDS) or contact sales@alliancechemical.com.

FORM

Liquid [Product record](#)

SPECIFIC GRAVITY (20 °C)

1.27 [Product record](#)

BOILING POINT

Not characterized for the 25% solution

[Product record](#)

VAPOR PRESSURE

0 mmHg (approx) (NIOSH, 2024)

[Product record](#)

ODOR

... Odorless ... [Product record](#)

DENSITY

1.27 (25% w/w aqueous solution, 20 °C)

[Product record](#)

MELTING POINT

Not characterized for the 25% solution

[Product record](#)

Strong base — hygroscopic; values may drift in opened containers. See storage guidance.

MATERIALS OF CONSTRUCTION SERVICE ENVELOPE ≈ 25%

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Fair	40	Limited service life	Cole-Parmer Chemical Compatibility
EPDM Elastomer	Excellent	90	Preferred elastomer	Cole-Parmer Chemical Compatibility
Viton (FKM) Elastomer	Poor	—	Not recommended above 25%	Cole-Parmer Chemical Compatibility
PTFE Fluoropolymer	Excellent	200	Lining and gaskets	Cole-Parmer Chemical Compatibility
Borosilicate Glass Glass Ceramic	Fair	25	Attacked above 30 % or elevated temp; avoid long-term service.	Cole-Parmer Chemical Compatibility
304 stainless steel Metal	Good	80	Acceptable for dilute caustic	Cole-Parmer Chemical Compatibility
316 stainless steel Metal	Excellent	95	Standard caustic service	Cole-Parmer Chemical Compatibility
316L Stainless Steel Metal	Excellent	80	Preferred metal for caustic service.	NACE TM0177
Aluminium Metal	Not recommended	—	Rapid attack; generates hydrogen	Cole-Parmer Chemical Compatibility
Carbon steel Metal	Good	50	Acceptable to 50 °C; caustic embrittlement above	Cole-Parmer Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Carbon Steel Metal	Good	60	Acceptable below 70 °C; caustic embrittlement risk above.	NACE Caustic Service Limits
Nickel Metal	Excellent	100	Preferred for high-temperature caustic	Cole-Parmer Chemical Compatibility
Zinc / galvanized steel Metal	Not recommended	—	Rapid corrosion	Cole-Parmer Chemical Compatibility
HDPE Thermoplastic	Excellent	60	Standard drum / IBC material	Cole-Parmer Chemical Compatibility
Polypropylene Thermoplastic	Excellent	80	Excellent caustic service to 50 %.	Cole-Parmer Chemical Compatibility
PP Thermoplastic	Excellent	80	Preferred for elevated temperature	Cole-Parmer Chemical Compatibility
PVC Thermoplastic	Good	40	Acceptable for ambient service	Cole-Parmer Chemical Compatibility

Ratings reflect the service envelope (concentration × temperature) shown. Always confirm against your specific duty cycle and contact-time before equipment selection. The most cautious rating across overlapping references is shown.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER	HAZARD CLASS
UN1824 Adjudicated	8 Adjudicated
PACKING GROUP	PROPER SHIPPING NAME
II Adjudicated	SODIUM HYDROXIDE SOLUTION Adjudicated

GHS / OSHA HAZCOM 2012

SIGNAL WORD	H-CODES (HAZARD STATEMENTS)
Danger Adjudicated	H290, H314 ECHA CLP Annex VI
P-CODES (PRECAUTIONARY STATEMENTS)	
P234, P260, P264, P280, P301+P330+P331, P303+P361+P353, P304+P340, P305+P351+P338, P310, P321, P363, P405, P501 ECHA CLP Annex VI	

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)	ACGIH TLV
2 mg/m³ TWA OSHA 29 CFR 1910.1000	— unknown
NIOSH REL	NIOSH IDLH
2 mg/m³ ceiling NIOSH Pocket Guide	10 mg/m³ NIOSH Pocket Guide

Transport descriptions reflect 49 CFR 172.101 lookup at time of publication. Sourced data: ECHA CLP Annex VI for harmonised classifications, NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

Supplier Qualification Packet

One zipped download containing the TDS, SDS, latest lot COA (when available), and a fresh Letter of Continuing Guaranty for Sodium Hydroxide 25% ACS Grade. Every file included is SHA-256 hashed and listed in a manifest your QA team can audit.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
S5881	ACS Reagent	≥97%	Exact	Reagent grade, anhydrous pellets

Cross-references are informational. Confirm against the manufacturer's current specification before substitution. Competitor trademarks are property of their respective owners.

APPLICATION GUIDANCE

Sodium Hydroxide 25% ACS Grade (ACS Grade) is a strong base used for pH control, saponification, and chemical manufacturing.

- pH adjustment and neutralization
- Saponification and detergent manufacturing
- Pulp and paper processing
- Water treatment and softening
- Chemical synthesis (caustic-driven reactions)

Highly exothermic when diluted — control mixing rate and temperature. Hygroscopic; protect from atmospheric moisture and CO₂.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, dry, well-ventilated area in compatible containers (HDPE, lined steel — not aluminium).
Tightly sealed; protect from atmospheric...

INCOMPATIBILITIES

Acids (violent neutralization), aluminium, zinc, tin (generates hydrogen gas), halogens, organic nitro compounds.

HANDLING PRECAUTIONS

Use full PPE including chemical splash goggles and alkali-resistant gloves. Add base to water slowly with stirring. Highly exothermic dilution.

SHELF LIFE

24 months from date of manufacture in sealed, original packaging

For full hazard, PPE, and emergency response guidance, refer to the Safety Data Sheet (SDS) for this product. The SDS controls in all cases where guidance differs.

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

UN1824, SODIUM HYDROXIDE SOLUTION, 8, PG II

Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS 60	PLACARD Corrosive	PACKING GROUP PG II
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REVISION HISTORY

Last reviewed 2026-05-20 by Hossein Taki, Vice President (Vice President, Alliance Chemical · CAGE Code 1LT50 · DOT Hazmat Registrant #2188383).

VERSION	DATE	CHANGE	TRIGGER
1.0	2026-05-20	Initial URL-first TDS published from canonical chemistry registry.	initial

This Technical Data Sheet is provided for technical reference. The Safety Data Sheet (SDS) controls in all cases where guidance differs. Values reflect Alliance Chemical canonical data at time of generation; subsequent revisions are recorded in the Revision History above.

ALLIANCE CHEMICAL

Order Sodium Hydroxide 25% ACS Grade

Bulk & packaged sizes · COA/SDS ships with every order