TECHNICAL DATA SHEET

Sodium Hydroxide 5% Technical Grade

Technical · 5%

CAS NUMBER	ALLIANCE CODE	GENERATED
1310-73-2	sodium-hydroxide-5-technical-grade	2026-08-31

REVISION	REVIEWED
1.2	2026-06-18 · Andre Taki

IDENTITY & COMPOSITION

PRODUCT NAME
Sodium Hydroxide 5% Technical Grade

ALLIANCE CODE
sodium-hydroxide-5-technical-grade

GRADE
Technical

CONCENTRATION
5%

CAS NUMBER
1310-73-2 PubChem

FORMULA
HNaO PubChem

MOLECULAR WEIGHT
39.997 PubChem

PRODUCT TYPE
solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (NaOH)	4.5 – 5.5 %	5.0 %	—	Commercial practice
Sodium chloride (NaCl)	10 PPM	2.5 PPM	Turbidimetry	Derived by dilution
Iron (Fe)	0.3 PPM	0.05 PPM	Colorimetry	Derived by dilution

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Sodium Carbonate (Na2CO3)	0.01 WT. % max.	0.003 WT. %	Titrimetry	Derived by dilution
Sodium chlorate (NaClO3)	4 PPM	1.2 PPM	Ion Chromatography	Derived by dilution
Sodium oxide (Na2O)	3.83 - 4.00 WT. %	3.915 WT. %	Calculated	Derived by dilution
Sodium sulfate (Na2SO4)	4 PPM	0.5 PPM	Ion Chromatography	Derived by dilution

Specification values are guaranteed limits. Typical values are representative of production lots and are not guaranteed. Lot-specific certificates of analysis ship with every order.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE Technical	5%	—	current
ACS Grade	50%	—	sodium-hydroxide-50-solution-acs-grade
Membrane Grade	50%	—	sodium-hydroxide-50-membrane-grade-caustic-soda-lye
ACS	30%	—	sodium-hydroxide-30-acs-grade
Technical	30%	—	sodium-hydroxide-30-technical-grade
—	25%	—	sodium-hydroxide-25
ACS Grade	25%	—	sodium-hydroxide-25-acs-grade
ACS	20%	—	sodium-hydroxide-20-acs-grade

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
Technical	20%	—	`sodium-hydroxide-20-technical-grade`
Technical	15%	—	`sodium-hydroxide-15-technical-grade`
ACS	10%	—	`sodium-hydroxide-10-acs-grade`
Technical	10%	—	`sodium-hydroxide-10-technical-grade`
ACS	5%	—	`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

PROPERTY	VALUE	SOURCE
Color	Max 20	Interpreted
Specific Gravity (20 °C)	1.048 - 1.059	Interpreted

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

MATERIALS OF CONSTRUCTION SERVICE ENVELOPE ≈ 5%

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Fair	40	Limited service life	Cole-Parmer Chemical Compatibility
EPDM Elastomer	Excellent	100	Standard for caustic gaskets.	Parker O-ring Chemical Compatibility
Viton (FKM) Elastomer	Poor	—	Hydrolyzes in caustic; do not use.	Parker O-ring Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
PTFE Fluoropolymer	Excellent	200	Universal compatibility.	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
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	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 tote/drum 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

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
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
UN1824 Adjudicated

HAZARD CLASS
8 Adjudicated

PACKING GROUP
II Adjudicated

PROPER SHIPPING NAME
Sodium hydroxide solution Adjudicated

GHS / OSHA HAZCOM 2012

SIGNAL WORD
Danger Adjudicated

H-CODES (HAZARD STATEMENTS)
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)
2 mg/m³ TWA OSHA 29 CFR 1910.1000

ACGIH TLV
— no canonical

NIOSH REL
2 mg/m³ ceiling NIOSH Pocket Guide

NIOSH IDLH
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.

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.

APPLICATIONS

pH adjustment in water treatment; pulp and paper; textile scouring and dyeing; soap and detergent manufacturing; petroleum refining and oil drilling; aluminum processing; chemical synthesis

basekim.com

Applications are drawn from published manufacturer and supplier documentation; each is sourced. Suitability for a specific use is the buyer's to confirm.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, dry, well-ventilated area in compatible containers (HDPE, lined steel — not aluminium). Tightly sealed; protect from atmospheric moisture and CO2. Segregate from acids and oxidizers.

Class-level guidance — not product-specific; the SDS controls.

HANDLING PRECAUTIONS

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

Class-level guidance — not product-specific; the SDS controls.

INCOMPATIBILITIES

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

Class-level guidance — not product-specific; the SDS controls.

SHELF LIFE

Consult Technical Services for product-specific shelf life

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)

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UN1824, Sodium hydroxide solution, 8, PG II
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Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS	PLACARD	PACKING GROUP
60	Corrosive	PG II

REVISION HISTORY

Last reviewed 2026-06-18 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.2	2026-07-22	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • `dotSubsidiaryHazardClass` · canonical change (coa.data_provenance / adjudication) • `dotProperShippingName` · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-06-18	Canonical data re-verified: 3 fields updated against independent vendor SDSs, CLP Annex VI, 49 CFR, and OSHA HazCom 2024 (GHS classification, hazard/precautionary codes, signal word, physical properties as applicable). • `countryOfOrigin` · canonical adjudication / reground (coa.data_provenance) • `ghsClassification` · canonical adjudication / reground (coa.data_provenance) • `hsCode` · canonical adjudication / reground (coa.data_provenance)	canonical_change
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.