

TECHNICAL DATA SHEET

Potassium Hydroxide 45% Solution ACS Grade

ACS Reagent · 45%

CAS NUMBER

1310-58-3

ALLIANCE CODE

potassium-hydroxide-45-solution-acs-grade

GENERATED

2026-08-12

1. IDENTITY & COMPOSITION

PRODUCT NAME

Potassium Hydroxide 45% Solution ACS Grade

ALLIANCE CODE

potassium-hydroxide-45-solution-acs-grade

GRADE

ACS Reagent

CONCENTRATION

45%

CAS NUMBER

1310-58-3 Adjudicated

FORMULA

HKO Adjudicated

MOLECULAR WEIGHT

56.106 Adjudicated

PRODUCT TYPE

pure_substance

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE ACS Reagent	45%	—	current
Technical	45%	—	potassium-hydroxide-45-solution-technical-grade-caustic-potash-liquid-koh
Technical	30%	—	potassium-hydroxide-30-solution-technical-grade
Technical	25%	—	potassium-hydroxide-25-solution-technical-grade-caustic-potash-liquid-koh

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.

MATERIALS OF CONSTRUCTION SERVICE ENVELOPE ≈ 45%

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
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 recommen ded	—	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

UN1814 **Adjudicated**

PACKING GROUP

II **Adjudicated**

HAZARD CLASS

8 **Adjudicated**

PROPER SHIPPING NAME

Potassium hydroxide solution **Adjudicated**

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger **Adjudicated**

H-CODES (HAZARD STATEMENTS)

H290, H302, H314 **Adjudicated**

P-CODES (PRECAUTIONARY STATEMENTS)

P234, P260, P264, P270, P280, P301+P312+P330,
P301+P330+P331, P303+P361+P353, P304+P340,
P305+P351+P338, P310, P321, P363, P405, P501...

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— **unknown**

ACGIH TLV

— **unknown**

NIOSH REL

— **unknown**

NIOSH IDLH

— **unknown**

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 Potassium Hydroxide 45% Solution ACS Grade. Every file included is SHA-256 hashed and listed in a manifest your QA team can audit.

APPLICATION GUIDANCE

Potassium Hydroxide 45% Solution ACS Grade (ACS Reagent) 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)

UN1814, Potassium 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

VERSION	DATE	CHANGE	TRIGGER
1.1	2026-08-11	Canonical data updated: 12 fields changed via the provenance/adjudication pipeline. - casNumber · canonical change (coa.data_provenance / adjudication) - formula · canonical change (coa.data_provenance / adjudication) - molecularWeight · canonical change (coa.data_provenance / adjudication) - unNumber · canonical change (coa.data_provenance / adjudication) - hazardClass · canonical change (coa.data_provenance / adjudication) - packingGroup · canonical change (coa.data_provenance / adjudication) - dotProperShippingName · canonical change (coa.data_provenance / adjudication) - signalWord · canonical change (coa.data_provenance / adjudication) - ghsClassification · canonical change (coa.data_provenance / adjudication) - hazard_h_codes · canonical change (coa.data_provenance / adjudication) - hazard_p_codes · canonical change (coa.data_provenance / adjudication) - dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication)	canonical_change

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 Potassium Hydroxide 45% Solution ACS Grade

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