

TECHNICAL DATA SHEET

Potassium Hydroxide (KOH) Technical Grade

Technical · 90.3%

CAS NUMBER

1310-58-3

ALLIANCE CODE

potassium-hydroxide-
flakes-koh

GENERATED

2026-08-31

REVISION

1.3

REVIEWED

2026-06-18 · Andre Taki

IDENTITY & COMPOSITION

PRODUCT NAME

Potassium Hydroxide (KOH) Technical Grade

ALLIANCE CODE

potassium-hydroxide-flakes-koh

GRADE

Technical

CONCENTRATION

90.3%

CAS NUMBER

1310-58-3 [PubChem](#)

FORMULA

HKO [PubChem](#)

MOLECULAR WEIGHT

56.106 [PubChem](#)

PRODUCT TYPE

pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay	90%	90 %	Acidimetric titration (Acidim.)	Supplier specification
Hydroxide alkalinity as KOH (wt. %)	90 min	90.8 wt %	—	Supplier specification
Arsenic (As)	0.0003 %	0.00001 %	—	Supplier specification

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Potassium chloride as KCl (ppm by wt.)	150 max	36 ppm	—	Supplier specification
Heavy metals (as Pb)	≤0.002%	0.0001 %	—	Supplier specification
Iron as Fe (ppm by wt.)	3 max	1.2 ppm	—	Supplier specification
Lead (Pb)	0.005 %	0.00001 %	—	Supplier specification
Nickel as Ni (ppm by wt.)	4 max	1.5 ppm	—	Supplier specification
Potassium carbonate as K ₂ CO ₃ (wt. %)	0.44 max	0.30 wt %	—	Supplier specification
Potassium Carbonate (K ₂ CO ₃)	≤1.0%	0.30 %	—	Supplier specification
Sulfate (SO ₄)	0.05%	0.0003 %	—	Supplier specification
Insoluble matter in H ₂ O	0.05 %	0.001 %	—	Supplier specification
Sodium (as Na)	0.5% Max.	0.24 %	Flame AAS / ICP-OES	Interpreted
carbonate as k ₂ co ₃	0.5 wt % max	0.30 wt %	—	Supplier specification

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.

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.

PROPERTY	VALUE	SOURCE
Form	Solid	Published reference
Odor	Odorless	Published reference
Density	1.45 to 1.50 at 68 °F (USCG, 1999)	Published reference
Boiling Point	greater than 266 °F at 760 mmHg (USCG, 1999)	Published reference
Melting Point	680 °F approximately (NTP, 1992)	Published reference
Flash Point	N/A	Published reference
Vapor Pressure	1 mmHg at 1326 °F ; 5 mmHg at 1497 °F (NTP, 1992)	Published reference
Solubility (water)	107 g/100 cc at 59 °F (NTP, 1992)	Published reference

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

MATERIALS OF CONSTRUCTION SERVICE ENVELOPE ≈ 90.3%

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

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

UN1813 [49 CFR 172.101](#)

PACKING GROUP

II [Adjudicated](#)

HAZARD CLASS

8 [Adjudicated](#)

PROPER SHIPPING NAME

Potassium Hydroxide, solid [Adjudicated](#)

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger [Adjudicated](#)

H-CODES (HAZARD STATEMENTS)

H290, H302, H314 [ECHA CLP Annex VI](#)

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

[ECHA CLP Annex VI](#)

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— [no canonical](#)

ACGIH TLV

— [no canonical](#)

NIOSH REL

2 mg/m³ ceiling [NIOSH Pocket Guide](#)

NIOSH IDLH

— [no canonical](#)

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.

APPLICATIONS

Industrial uses of potassium hydroxide: detergents/soaps, dyeing and bleaching, paint and varnish removers, electroplating, photo engraving, lithography, alkaline batteries, analytical chemistry, fuel and gas, thickening agent, organic synthesis, stabilizer

[corecheminc.com](#)

Used in a large number of manufacturing processes [store.astm.org](#)

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

Store at room temperature; the material is deliquescent and absorbs CO₂ and moisture from the air, and the supplier's precautionary phrases include P405 (store locked up).

[itwreagents.com](https://www.itwreagents.com)

INCOMPATIBILITIES

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

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

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.

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.

SHELF LIFE

Consult Technical Services for product-specific shelf life

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

UN1813, Potassium Hydroxide, solid, 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

REVISION HISTORY

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

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-08-05	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. unNumber · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.2	2026-07-22	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. dotSubsidiaryHazardClass · 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.