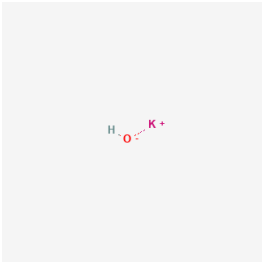
Technical Data Sheet

Potassium Hydroxide Flakes ACS Grade

ACS Grade · 86.8%

Alliance Code	Revised	Revision
potassium-hydroxide-flakes-acs-grade	2026-10-08	1.6

CAS number 1310-58-3	UN number UN1813	Hazard class · packing group 8 · PG II
 Structure · PubChem	Grade ACS Grade · 86.8%	Signal word **Danger**
Hazards Corrosive · Irritant / harmful · H290 H302 H314		
Proper shipping name Potassium hydroxide, solid		

IDENTITY & COMPOSITION

PRODUCT NAME
Potassium Hydroxide Flakes ACS Grade

ALLIANCE CODE
potassium-hydroxide-flakes-acs-grade

GRADE
ACS Grade

CONCENTRATION
86.8%

CAS NUMBER
1310-58-3 PubChem

FORMULA
KOH PubChem

PRODUCT TYPE
Pure substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (KOH)	>/= 85% KOH	—	—	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Calcium (Ca)	Max 0.005%	—	—	Interpreted
Chloride (Cl)	Max 0.01%	—	—	Interpreted
Heavy metals	Max 0.001%	—	ICP-OES	Interpreted
Iron (Fe)	≤0.001 %	—	—	Interpreted
Magnesium (Mg)	Max 0.002%	—	—	Interpreted
Nickel (Ni)	Max 0.001%	—	—	Interpreted
Nitrogen compounds (as N)	Max 0.001%	—	—	Interpreted
Phosphate (PO4)	Max 5 ppm	—	—	Interpreted
Sodium (Na)	Max 0.05%	—	—	Interpreted
Sulfate (SO4)	Max 0.003%	—	—	Interpreted
Potassium carbonate (K2CO3)	</= 2.0%	—	—	Interpreted
Ammonium hydroxide precipitate	Max 0.02%	—	Gravimetric — NH4OH precipitation and ignition	Interpreted
Carbonates	1 % max	—	—	Interpreted

Values are reproduced from the current product reference. Source labels do not by themselves establish a supplier guarantee or a test result for your lot. Confirm applicable acceptance limits and request lot-specific documentation.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	White, crystalline hygroscopic flakes	Adjudicated
Form	Solid	Published reference
Odor	Odorless	Adjudicated
pH	13.5–14 (0.1 M to 10% solution)	Adjudicated
Specific Gravity	2.04 (water = 1)	Adjudicated
Density	1.45 g/cm^3 to 1.50 at 68 °F (USCG, 1999)	Published reference
Boiling Point	1,320–1,327 °C (2,408–2,421 °F)	Adjudicated
Melting Point	360–406 °C (680–763 °F), depending on water content	Adjudicated
Flash Point	Not applicable	Adjudicated
Vapor Pressure	Negligible at 20 °C (1 mmHg at 719 °C)	Adjudicated
Solubility (water)	Very soluble in water, about 1,120–1,210 g/L at 20–25 °C (strongly exothermic); soluble in alcohol and glycerin	Adjudicated

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

MATERIALS OF CONSTRUCTION SERVICE ENVELOPE ≈ 86.8%

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

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Viton (FKM) Elastomer	Poor	—	Not recommended above 25%	Cole-Parmer Chemical Compatibility
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

HAZARD CLASS

8 Adjudicated

PACKING GROUP

II Adjudicated

PROPER SHIPPING NAME

Potassium hydroxide, solid Adjudicated

GHS / OSHA HCS 2024

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, P390, P405, P406, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— no canonical

ACGIH TLV

2 mg/m^3 Ceiling Adjudicated

NIOSH REL

2 mg/m^3 Ceiling Adjudicated

NIOSH IDLH

— no canonical

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

HEALTH & FIRE HAZARD

ACUTE TOXICOLOGY

LD$_{50}$ ORAL

214–333 mg/kg (rat), the basis for H302

Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

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

Keep tightly closed in a dry place — the flakes absorb moisture and carbon dioxide from air. Use steel, polyethylene or polypropylene containers, never aluminum or galvanized metal. Keep away from acids.

Adjudicated

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

Water in quantity (violent heat release); acids (violent reaction); aluminum, zinc, tin, copper, magnesium and their alloys (release flammable hydrogen); nitro compounds; organic materials; halogenated compounds.

Adjudicated

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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UN1813, Potassium hydroxide, solid, 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 2026-10-08 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.6	2026-10-08	Canonical data updated: 20 fields changed via the provenance/adjudication pipeline. • synonyms · canonical change (coa.data_provenance / adjudication) • restrictions_on_use · canonical change (coa.data_provenance / adjudication) • odor · canonical change (coa.data_provenance / adjudication) • pH · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • vaporPressure · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · canonical change (coa.data_provenance / adjudication) • oel_niosh_rel · canonical change (coa.data_provenance / adjudication) • incompatible_materials · canonical change (coa.data_provenance / adjudication) • conditions_to_avoid · canonical change (coa.data_provenance / adjudication) • hazardous_decomposition_products · canonical change (coa.data_provenance / adjudication) • storage_precautions · canonical change (coa.data_provenance / adjudication) • rcra_waste_codes · canonical change (coa.data_provenance / adjudication) • cercla_rq · canonical change (coa.data_provenance / adjudication) • dot_transport_note · canonical change (coa.data_provenance / adjudication) • recommended_use · canonical change (coa.data_provenance / adjudication)	canonical_change
1.5	2026-10-07	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. • 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)	canonical_change
1.4	2026-09-30	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • appearance · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-08-05	Canonical data updated: 4 fields changed via the provenance/adjudication pipeline. • dotProperShippingName · canonical change (coa.data_provenance / adjudication) • hazardClass · canonical change (coa.data_provenance / adjudication) • packingGroup · canonical change (coa.data_provenance / adjudication) • unNumber · canonical change (coa.data_provenance / adjudication)	canonical_change
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.