Technical Data Sheet

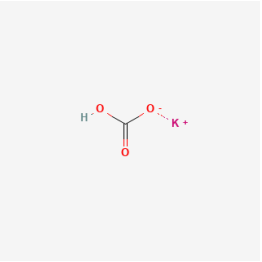
Potassium Bicarbonate - FCC USP Grade

USP Grade

Alliance Code	Revised	Revision
potassium-bicarbonate-fcc-usp-grade	2026-10-13	1.4

CAS number

298-14-6



Structure · PubChem

Grade

USP Grade

IDENTITY & COMPOSITION

PRODUCT NAME

Potassium Bicarbonate - FCC USP Grade

ALLIANCE CODE

potassium-bicarbonate-fcc-usp-grade

GRADE

USP Grade

CONCENTRATION

—

CAS NUMBER

298-14-6 PubChem

FORMULA

KHCO3 PubChem

PRODUCT TYPE

Pure substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (KHCO3, dried basis)	99.5 - 101.5 %	—	Acidimetric titration with 1 N hydrochloric acid VS using methyl red TS (1 mL = 100.1 mg KHCO3)	Interpreted
Arsenic (as As)	1.5 ppm by wt. Max.	—	Elemental impurities (USP <232>/<233> style ICP determination)	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Cadmium (as Cd)	0.2 ppm by wt. Max.	—	Elemental impurities (USP <232>/<233> style ICP determination)	Interpreted
Carbonate (FCC limit test)	Passes test (solution does not immediately turn more than a faint pink color)	—	Dissolve 1 g without agitation in 20 mL water at not above 5 degrees C, add 2 mL 0.1 N hydrochloric acid and 2 drops phenolphthalein	Interpreted
Heavy Metals (as Pb)	5 ppm max	—	—	Interpreted
Identification	A 1:10 aqueous solution gives positive tests for Potassium and for Bicarbonate	—	Chemical identity tests for Potassium and for Bicarbonate on a 1:10 aqueous solution	Interpreted
Lead (Pb)	Not more than 2 mg/kg	—	APDC Extraction Method under Lead Limit Test, FCC Appendix IIIB	Interpreted
Loss on Drying	Not more than 0.25 %	—	Dried over silica gel for 4 hours (FCC Appendix IIC)	Interpreted
Loss on Drying - USP acceptance criterion	Not more than 0.3 %	—	Dry over silica gel for 4 hours	Interpreted
Mercury (as Hg)	0.3 ppm by wt. Max.	—	Elemental impurities (USP <232>/<233> style ICP determination)	Interpreted
Normal Carbonate	max. 2.5%	—	—	Interpreted
Residual Solvents	Meets Requirements	—	USP <467> (not required where no solvents are used in manufacture)	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Chloride (as Cl)	0.001 % max	—	USP <221> chloride limit test / argentometric titration	Interpreted
Sulfate (as SO4)	Not more than 0.01 %	—	USP <221> sulfate limit test, turbidimetric against standard	Interpreted
Iron (Fe)	Not more than 5 mg/kg	—	ICP-OES (FCC iron limit test)	Interpreted
Screen Analysis (sieve)	100 % through 20 mesh (850 um); not more than 10 % through 200 mesh (75 um)	—	ASTM E11 sieve stack / Ro-Tap, 10 min	Interpreted
Calcium	0.002 % max	—	—	Interpreted
Insoluble	0.01 % max	—	—	Interpreted
Magnesium	0.001 % max	—	—	Interpreted
Tot. alk	99.5 - 101.5 Wt.%	—	—	Interpreted
Cd	0.2 Wt.ppm 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	Fine white crystalline powder, uniform granulation	Adjudicated
Form	Solid	Published reference
pH	8.0 - 8.6	Interpreted
Density	~64 lb/cu.ft (published as informational only, not a specification item)	Interpreted
Boiling Point	87	Published reference
Melting Point	Decomposes before melting	Adjudicated
Flash Point	N/A	Published reference
Solubility (water)	Soluble	Published reference

MATERIALS OF CONSTRUCTION SERVICE ENVELOPE ≈ 100%

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Good	60	Acceptable	Cole-Parmer Chemical Compatibility
EPDM Elastomer	Excellent	100	Standard for brine gaskets.	Parker O-ring Chemical Compatibility
Viton (FKM) Elastomer	Excellent	100	Preferred elastomer	Cole-Parmer Chemical Compatibility
Borosilicate Glass Glass Ceramic	Excellent	100	Universally inert to salt solutions.	Cole-Parmer Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Concrete (sealed) Glass Ceramic	Good	—	Acceptable with epoxy coating	Cole-Parmer Chemical Compatibility
304 stainless steel Metal	Fair	25	Pitting in chloride-rich service	Cole-Parmer Chemical Compatibility
316L Stainless Steel Metal	Good	60	Watch for chloride pitting above 60 °C in chloride salts.	NACE Chloride Pitting Guidelines
Aluminium Metal	Poor	—	Pitting; not recommended for brine	Cole-Parmer Chemical Compatibility
Carbon steel Metal	Poor	—	Rapid rust in brine	Cole-Parmer Chemical Compatibility
FRP Thermoplastic	Excellent	60	Common bulk-storage	Cole-Parmer Chemical Compatibility
HDPE Thermoplastic	Excellent	60	Universal salt brine compatibility.	Cole-Parmer Chemical Compatibility
PP Thermoplastic	Excellent	80	Acceptable for hot brine	Cole-Parmer Chemical Compatibility
PVC Thermoplastic	Excellent	60	Standard for brine piping.	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

Not regulated Adjudicated

HAZARD CLASS

Not regulated Adjudicated

PACKING GROUP

Not regulated Adjudicated

PROPER SHIPPING NAME

Not regulated Adjudicated

GHS / OSHA HCS 2024

SIGNAL WORD

Not regulated Adjudicated

H-CODES (HAZARD STATEMENTS)

Not applicable Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)

Not applicable Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— no canonical

ACGIH TLV

— no canonical

NIOSH REL

— no canonical

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.

APPLICATIONS

Food-grade functional use as a pH control agent and leavening agent (FCC Food Grade monograph function statement)

potassiumbicarbonate.org

pH control and leavening agent function stated for FCC Food Grade material anmol.org

Use as a pharmaceutical excipient (USP anhydrous material registered with the US FDA as an excipient)

armandproducts.com

Supplied as a bulk food chemical and bulk pharmaceutical chemical for manufacturing, processing or repacking

mgscientific.com

pH control anmol.org

leavening agent anmol.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 containers tightly closed and labeled in a cool, dry, well-ventilated place, separated from lime and acids. Very hygroscopic.

Adjudicated

HANDLING PRECAUTIONS

Standard chemical PPE — dust mask and goggles for handling of fine grades. Avoid generating airborne dust.

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

INCOMPATIBILITIES

Strong acids; strong oxidizing agents; lime (forms corrosive potassium hydroxide); aluminum, brass, bronze, copper, lead, tin and zinc.

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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Not regulated for transport.
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Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS

70

REVISION HISTORY

Last reviewed 2026-10-13 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.4	2026-10-13	Canonical data updated: 4 fields changed via the provenance/adjudication pipeline. • storage_precautions · 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)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-10-02	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • hazard_h_codes · canonical change (coa.data_provenance / adjudication) • hazard_p_codes · canonical change (coa.data_provenance / adjudication)	canonical_change
1.2	2026-09-30	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • meltingPoint · canonical change (coa.data_provenance / adjudication) • appearance · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-06-17	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) • dotSubsidiaryHazardClass · 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.