



>>Entry Name: Potassium hydroxide (KOH), 8Cl

ENTRY UNDER REVIEW

Synonym(s): Potash

CAS Registry Number: 1310-58-3

KOH

Molecular Formula: HKO

Molecular Weight: 56.106

Accurate Mass: 55.966447

Percentage Composition: H 1.80%; K 69.69%; O 28.52%

Source/Synthesis: Manuf. by electrolysis of aq. KCl

Use/Importance: Commercially available. Fertiliser, etchant for semiconductor devices, saponification agent, polym. catalyst. Used in the synth. of potassium phosphates (for liquid detergents) and other potassium derivs. Strong base. Important industrial chemical, 38th in order of volume for USA in 1994 (production 1.57 million tons/year)

Physical Description: Colourless orthorhombic cryst.; deliquescent. Undergoes orthorhombic to cubic transition at 243°

Melting Point: Mp 406°

Boiling Point: Bp 1324°

Solubility: V. sol. H₂O (107 g per 100 cm³ at 15°, 178 g per 100 cm³ at 100°); sol. EtOH; insol. Et₂O

Other Data: ΔH_f° -424.7 kJ mol⁻¹; ΔG_f° -378.9 kJ mol⁻¹; S° 78.9 J K⁻¹ mol⁻¹. Readily reacts with CO₂ and H₂S to form K₂CO₃ (KHCO₃) and K₂S (KSH)

Hazard & Toxicity: Corrosive, toxic

Aldrich: 31936-8

Fluka: 60369

Sigma: J5947

>>Derivative: Monohydrate

CAS Registry Number: 26288-25-5

Source/Synthesis: Recryst. from supercritical NH₃

Physical Description: Hygroscopic colourless monoclinic cryst.

Melting Point: Mp 127°

>>Derivative: Dihydrate

CAS Registry Number: 12306-33-1

Physical Description: Colourless monoclinic cryst.

Solubility: V. sol. H₂O (195 g per 100 cm³ at 25°)

Other Data: ΔH_f° -1051 kJ mol⁻¹; ΔG_f° -887 kJ mol⁻¹; S° 151 J K⁻¹ mol⁻¹

>>Derivative: Deutero compd.

Synonym(s): Potassium deuterioxide

CAS Registry Number: 24572-01-8

Molecular Formula: DKO

Molecular Weight: 57.112

Source/Synthesis: Commercially available as 40 wt.% soln. in D₂O. Synth. by reaction of K (metal) with D₂O

Use/Importance: Used to label org. molecules with D

Physical Description: Deliquescent colourless orthorhombic cryst.

Melting Point: Mp 406°

Boiling Point: Bp 1324°

Other Data: ΔH_f° -425 kJ mol⁻¹; ΔG_f° -379 kJ mol⁻¹; S° 79 J K⁻¹ mol⁻¹

Hazard & Toxicity: Corrosive, toxic

Aldrich: 17676-1

Sigma: P8016

References: