



>>Entry Name: Potassium hydride (KH), 8Cl

CAS Registry Number: 7693-26-7

KH

Molecular Formula: HK

Molecular Weight: 40.106

Accurate Mass: 39.971532

Percentage Composition: H 2.51%; K 97.49%

Source/Synthesis: Synth. by direct reaction of elements

Use/Importance: Commercially available as a dispersion in mineral oil (35 wt. %). Reducing agent, particularly in org. synth.

Physical Description: Moisture-sensitive white cryst.

Other Data: Dissoc. on heating into K metal and H₂. $\Delta H_f^\circ -57.8 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -53.0 \text{ kJ mol}^{-1}$; $S^\circ 50.2 \text{ J K}^{-1} \text{ mol}^{-1}$

Hazard & Toxicity: Flammable, corrosive. Reacts violently with H₂O → KOH + H₂

Aldrich: 21581-3

Fluka: 60328

>>Derivative: Deutero compound

Synonym(s): Potassium deuteride

CAS Registry Number: 13886-67-4

Molecular Formula: DK

Molecular Weight: 41.112

Source/Synthesis: Synth. by direct reaction of the elements

Use/Importance: Commercially available dispersed in mineral oil. Labelling agent

Physical Description: White moisture sensitive cubic cryst.

Other Data: $\Delta H_f^\circ -58 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -53 \text{ kJ mol}^{-1}$; $S^\circ 50 \text{ J K}^{-1} \text{ mol}^{-1}$. Dissoc. on heating to K metal and D₂

Hazard & Toxicity: Flammable, corrosive. Reacts violently with H₂O → KOH (KOD) + H₂, HD

References:

- Mikheeva, V.I. *et al.*, *Zh. Neorg. Khim.*, 1962, **7**, 463, (*synth, props*)
Kuznetsov, V.G. *et al.*, *Zh. Strukt. Khim.*, 1962, **3**, 553, (*cryst struct*)
Bartky, I.R., *J. Mol. Spectrosc.*, 1966, **20**, 299, (*uv*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 935
Brown, C.A., *J.O.C.*, 1974, **39**, 3913, (*rev, uses*)
Japan. Pat., 1974, 7 441 419; *CA*, 1975, **82**, 139794, (*labelling*)
Pinnick, H.W., *Org. Prep. Proced. Int.*, 1983, **15**, 199, (*rev, uses*)
Haese, N.N. *et al.*, *J. Chem. Phys.*, 1984, **81**, 3766, (*ir*)
Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 1217, (*thermochem data*)
Rahman, A. *et al.*, *Indian J. Pure Appl. Phys.*, 1988, **26**, 400, (*ir*)
Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 2899A; 2903C, (*haz*)
Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, PLJ250