



>>Entry Name: Potassium cyanate

Synonym(s): Cyanic acid potassium salt, 8Cl. Alicyanate

CAS Registry Number: 590-28-3

K[OCN]

Molecular Formula: CKNO

Molecular Weight: 81.115

Accurate Mass: 80.961696

Percentage Composition: C 14.81%; K 48.20%; N 17.27%; O 19.72%

Source/Synthesis: Synth. either by precipitation reaction of $\text{Hg}(\text{OCN})_2 + \text{KSCN}$ in Me_2CO or by mild oxidation of aq. KCN using Pb(IV)

Use/Importance: Commercially available. Used for the carbonitridation of steels

Physical Description: Colourless tetragonal cryst.

Solubility: V. sol. H_2O (75 g per 100 cm^3 at 25°); insol. EtOH

Other Data: Dec. on heating $\rightarrow \text{KCN} + \text{O}_2$

Aldrich: 21507-4

Fluka: 60160

References:

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1269A, (*ir*)

Cleveland, F.F., *J.A.C.S.*, 1941, **63**, 622, (*Raman*)

Swanson, H.E. *et al.*, *Natl. Bur. Stand. Circ. (U.S.)*, 1957, **7**, 39, (*cryst struct*)

Beck, W., *Chem. Ber.*, 1962, **95**, 341, (*ir*)

Soderback, E., *Acta Chem. Scand.*, 1971, **25**, 3534, (*synth*)

Bloor, E.G. *et al.*, *Can. J. Chem.*, 1972, **50**, 3926, (*K-39 nmr*)

Kanamori, K. *et al.*, *Biochemistry*, 1983, **22**, 2658, (*N-15 nmr*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials, 8th edn.*, Van Nostrand Reinhold, 1992, PLC250