



>>Entry Name: Potassium thiocyanate

Synonym(s): Thiocyanic acid potassium salt, 8Cl

CAS Registry Number: 333-20-0

K[SCN]

Molecular Formula: CKNS

Molecular Weight: 97.182

Accurate Mass: 96.938851

Percentage Composition: C 12.36%; K 40.23%; N 14.41%; S 33.00%

Source/Synthesis: Prepd. by fusing together KCN and sulfur

Use/Importance: Commercially available. Used in electroplating solns., particularly for silver, and also for photographic developers

Physical Description: Colourless orthorhombic deliquescent. cryst. Undergoes orthorhombic to tetragonal transition at 160°

Melting Point: Mp 173°

Solubility: V. sol. H₂O (177 g per 100 cm³ at 0°; 217 g per 100 cm³ at 20°), Me₂CO (21 g per 100 cm³ at 22°); sol. EtOH

Other Data: ΔH_f° -200 kJ mol⁻¹; ΔG_f° -178 kJ mol⁻¹; S° 124 J K⁻¹ mol⁻¹

Hazard & Toxicity: Toxic. Reaction with KHSO₄ yields free HNCS

Aldrich: 31942-2

Fluka: 60523

Sigma: P3048

References:

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

Klug, H.P., *Z. Kristallogr.*, 1933, **85**, 214, (*cryst struct*)

Tramer, A., *J. Chem. Phys.*, 1962, **59**, 232, (*ir, Raman*)

Yamada, Y. *et al.*, *Bull. Chem. Soc. Jpn.*, 1963, **36**, 1032, (*polymorphs*)

Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 954

Kargol, J.A. *et al.*, *Inorg. Chim. Acta*, 1977, **25**, L109, (*cmr*)

Schmidt, E. *et al.*, *Spectrosc. Lett.*, 1981, **14**, 787, (*K-39 nmr*)

Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 2911C, (*haz*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials, 8th edn.*, Van Nostrand Reinhold, 1992, PLV750