



>>Entry Name: Potassium selenate (K₂SeO₄)

Synonym(s): Selenic acid, dipotassium salt, 8Cl

CAS Registry Number: 7790-59-2

K₂SeO₄

Molecular Formula: K₂O₄Se

Molecular Weight: 221.154

Accurate Mass: 221.823594

Percentage Composition: K 35.36%; O 28.94%; Se 35.70%

Source/Synthesis: Synth from K₂CO₃ and aq. H₂SeO₄ or by oxidation of K₂SeO₃ at 900° in air

Physical Description: Colourless hygroscopic orthorhombic cryst. Undergoes orthorhombic to hexagonal phase transition at 472°

Melting Point: Mp 1000°

Solubility: V. sol. H₂O (111 g per 100 cm³ at 0°; 122 g per 100 cm³ at 100°)

Other Data: On cooling forms an incommensurate phase at 129K which transforms into a ferroelectric phase at 93K. $\Delta H_f^\circ - 1136.4 \text{ kJmol}^{-1}$

Aldrich: 40080-7

References:

Ganesan, A.S., *Proc. Indian Acad. Sci., Sect. A*, 1934, **1A**, 120, (*Raman*)

Chretien, A. *et al.*, *Bull. Soc. Chim. Fr.*, 1939, **6**, 1587, (*synth*)

Duval, C. *et al.*, *Z. Elektrochem.*, 1960, **64**, 582, (*ir*)

Gattow, G., *Acta Cryst.*, 1962, **15**, 419, (*cryst struct*)

Birchall, T. *et al.*, *Can. J. Chem.*, 1965, **43**, 1672, (*Se-77 nmr*)

Ishibashi, Y., *Ferroelectrics*, 1978, **20**, 103, (*incommensurate phase*)

Massa, N.E. *et al.*, *Phys. Rev. B: Condens. Matter*, 1983, **27**, 1523, (*low temp polymorphs, Raman*)

Iwata, Y. *et al.*, *Annu. Rep. Res. React. Inst., Kyoto Univ.*, 1984, **17**, 43; *CA*, 1985, **102**, 195650, (*high temp polymorphs*)

Iwata, Y. *et al.*, *CA*, 1984, **101**, 63944, (*polymorphs*)

Shirane, G., *Ferroelectrics*, 1984, **53**, 15, (*ferroelectric props*)

Echegut, P. *et al.*, *Phys. Rev. B: Condens. Matter*, 1985, **31**, 581, (*low temp ir, Raman*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, PLR750