



>>Entry Name: Hexasodium metaphosphate ($\text{P}_6\text{O}_{18}^{6(-)}$), 9Cl, 8Cl

ENTRY UNDER REVIEW

Synonym(s): Sodium hexametaphosphate. SHMP. Graham's salt. Sodium tetrapolyphosphate

CAS Registry Number: 10124-56-8

Related CAS Registry Numbers(s): 13478-98-3 14550-21-1

$\text{Na}_6(\text{P}_6\text{O}_{18})$

Molecular Formula: $\text{Na}_6\text{O}_{18}\text{P}_6$

Molecular Weight: 611.77

Accurate Mass: 611.689644

Percentage Composition: Na 22.55%; O 47.07%; P 30.38%

Source/Synthesis: Synth. by heating NaH_2PO_4 at 700-900°; from hexalithium salt via ion-exchange. Anhydrous salt synth. from the hexahydrate at >120°

Use/Importance: Corrosion inhibitor; food additive; dispersant; uses in flotation agents, paper coatings, dentifrices, and water treatment, all claimed

Fluka: 71600

>>Derivative: Hexahydrate

CAS Registry Number: 15528-36-6

Physical Description: Colourless cryst. (aq. EtOH)

Other Data: Ion consists of 12-membered (P-O)₆ ring of six PO₄ tetrahedra joined at corners

Hazard & Toxicity: Of relatively low toxicity; LD₅₀ 3000-4300 mg Kg⁻¹ (small mammals)

References:

Jost, K.-H., *Acta Cryst.*, 1965, **19**, 555, (*cryst struct*)

Griffith, E.J. *et al.*, *Inorg. Chem.*, 1965, **4**, 549, (*synth, props*)

Kura, G. *et al.*, *J. Chromatogr.*, 1971, **56**, 111, (*purifn*)

Fluck, E. *et al.*, *Z. Naturforsch., B*, 1974, **29**, 603, (*pe*)

Griffiths, L. *et al.*, *J.C.S. Dalton*, 1986, 2247, (*P-31 nmr*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, SHM500