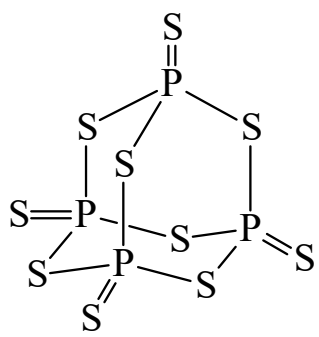
>>**Entry Name: Phosphorus sulfide (P_4S_{10})**
Synonym(s): 2,4,6,8,9,10-Hexathia-1,3,5,7-tetraphosphatricyclo[3.3.1.1^{3,7}]decane 1,3,5,7-tetrasulfide, 9CI. 2,4,6,8,9,10-Hexathia-1,3,5,7,-tetraphosphaadamantane 1,3,5,7-tetrasulfide. Phosphorus pentasulfide (incorr.). Tetraphosphorus decasulfide



CAS Registry Number: 1314-80-3
Extra CAS Registry Numbers(s): 15857-57-5

Molecular Formula: P_4S_{10}
Molecular Weight: 444.555
Accurate Mass: 443.615748
Percentage Composition: P 27.87%; S 72.13%

Source/Synthesis: Synth. from P + S at 350-400°
Use/Importance: Thiation reagent, converting eg. amides → thioamides. Deoxygenating agent, eg. sulfoxides → sulfides. Intermed. in manuf. of insecticides, lubricant additives, mineral flotation and extraction agents
Physical Description: Triclinic light yellow, almost colourless cryst. Dec. in moist air, or H_2O. Dissoc. at beginning of vaporisation → S + P_4S_7 and P_4S_3
Melting Point: Mp 281-283° (276°)
Boiling Point: Bp 514°
Solubility: Sl. sol. CS_2 (0.2g per 100g)
Other Data: ΔH°_{298} –680 kJ mol^{-1}

Aldrich: 23210-6
Fluka: 79600

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