



>>Entry Name: Tin phosphides

CAS Registry Number: 66579-64-4

Related CAS Registry Numbers(s): 12440-42-5 61162-25-2

Molecular Formula: [PSn]

Use/Importance: All phases are semiconducting

>>Variant: Tin phosphide (Sn<sub>4</sub>P<sub>3</sub>), 9Cl

CAS Registry Number: 12286-33-8

Molecular Formula: P<sub>3</sub>Sn<sub>4</sub>

Molecular Weight: 567.761

Accurate Mass: 564.530086

Percentage Composition: P 16.37%; Sn 83.63%

Source/Synthesis: The predominant phase in the Sn-P system

Other Data: There is a non-stoichiometric form which is deficient in P (approx. Sn<sub>4</sub>P<sub>2.65</sub>)

>>Variant: Tin phosphide (SnP), 9Cl

CAS Registry Number: 25324-56-5

Molecular Formula: PSn

Molecular Weight: 149.684

Accurate Mass: 148.875962

Percentage Composition: P 20.69%; Sn 79.31%

Source/Synthesis: Phase in the Sn-P system

Physical Description: Solid with a dull metallic lustre

>>Variant: Tin phosphide (SnP<sub>3</sub>), 9Cl

CAS Registry Number: 37367-13-8

Molecular Formula: P<sub>3</sub>Sn

Molecular Weight: 211.631

Accurate Mass: 210.823486

Percentage Composition: P 43.91%; Sn 56.09%

Physical Description: Cryst.

Melting Point: Mp 415°

Other Data: Dec. by HCl. On heating forms Sn<sub>4</sub>P<sub>3</sub>

References:

Katz, G. *et al.*, *Acta Cryst.*, 1957, **10**, 607, (*synth, cryst struct, SnP*)

Olafsson, O. *et al.*, *Acta Chem. Scand.*, 1967, **21**, 1659; 1970, **24**, 1153, (*synth, cryst struct, Sn<sub>4</sub>P<sub>3</sub>*)

Donohue, P.C. *et al.*, *Inorg. Chem.*, 1970, **9**, 335, (*cryst struct, high-pressure forms, SnP*)

Haggrum, L. *et al.*, *J. Solid State Chem.*, 1975, **13**, 204, (*SnP<sub>3</sub>, Mössbauer*)

Gullmann, J., *J. Solid State Chem.*, 1990, **87**, 202, (*cryst struct, SnP, SnP<sub>3</sub>*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, TGE500