>>**Entry Name: Gallium phosphide (GaP)**

CAS Registry Number: 12063-98-8

GaP

Molecular Formula: GaP
Molecular Weight: 100.697
Accurate Mass: 99.899342
Percentage Composition: Ga 69.24%; P 30.76%
General Statement: Zinc blende struct.
Source/Synthesis: Synth. from:- elements using excess of Ga as solv.; Zn_3P_2 + Ga at 800°, or var. organomet. precursors
Use/Importance: Use in solar energy conversion
Physical Description: Orange solid. Reacts slowly with H_2O acids
Melting Point: Mp 1465°
Other Data: ε 9.1. Band gap 2.25 eV. Mobility *n* 150, *p* 150 $cm^2\ s^{-1}\ V^{-1}$. Forms mixed cryst. with GaAs. ΔH_f° –102.1 kJ mol^{-1}

Fluka: 48550

References:

Giesecke, G. *et al.*, *Acta Cryst.*, 1958, **11**, 369, *(cryst struct)*
Addamiano, A.*, Acta Cryst.*, 1960, **13**, 505
Addamiano, A.*, J.A.C.S.*, 1960, **82**, 1537, *(synth)*
Willardson, R.K. *et al.*, *Compound Semiconductors*, Rheinhold, 1962, *(synth)*
Thurmond, C.D. *et al.*, *J. Phys. Chem. Solids*, 1965, **26**, 785, *(GaAs/GaP phase system)*
Tietjen, J.J. *et al.*, *J. Electrochem. Soc.*, 1966, **113**, 724, *(GaAs/GaP phase system)*
Mooradian, A. *et al.*, *Solid State Commun.*, 1966, **4**, 431, *(Raman)*
Panish, M.B.*, J. Electrochem. Soc.*, 1967, **114**, 1161, *(phase diagram)*
Van Vechten, J.A.*, Phys. Rev.*, 1969, **182**, 891, *(cryst struct)*
O'Keefe, M. *et al.*, *Acta Cryst. B*, 1978, **34**, 3519, *(cryst struct)*
Redon, A.M. *et al.*, *J. Electrochem. Soc.*, 1980, **127**, 2347, *(GaP/InP system)*