



>>Entry Name: Bis(dimethylphosphino)methane

Synonym(s): Methylenebis[dimethylphosphine], 10Cl, 9Cl. 2,4-Dimethyl-2,4-diphosphosphapentane

CAS Registry Number: 64065-08-3

Related CAS Registry Numbers(s): 69656-94-6

$\text{Me}_2\text{PCH}_2\text{PMe}_2$

Molecular Formula: $\text{C}_5\text{H}_{14}\text{P}_2$

Molecular Weight: 136.113

Accurate Mass: 136.057074

Percentage Composition: C 44.12%; H 10.37%; P 45.51%

Use/Importance: Ligand for many heavy metals

Physical Description: Liq.

Melting Point: Mp -59°

Boiling Point: Bp₁₂ 42° . Bp_{0.1} 45°

Other Data: Forms Li deriv.

>>Derivative: Dioxide

Synonym(s): Bis(dimethylphosphinyl)methane

CAS Registry Number: 17535-01-2

Molecular Formula: $\text{C}_5\text{H}_{14}\text{O}_2\text{P}_2$

Molecular Weight: 168.112

Accurate Mass: 168.046904

Percentage Composition: C 35.72%; H 8.39%; O 19.03%; P 36.85%

Use/Importance: Extractant for actinides

Physical Description: Hygroscopic needles (petrol)

Melting Point: Mp $132-134^\circ$ (subl.)

Boiling Point: Bp₂ $186-187^\circ$

References:

Richard, J.J. *et al.*, *J.A.C.S.*, 1961, **83**, 1722, (*oxide, synth*)

Karsch, H.H. *et al.*, *Z. Naturforsch., B*, 1977, **32**, 762, (*synth, pmr, cmr, P-31 nmr, ms*)

Karsch, H.H., *ACS Symp. Ser.*, 1981, **171**, 141, (*rev*)

Rankin, D.W.H. *et al.*, *J. Mol. Struct.*, 1981, **77**, 121, (*ed, struct*)

Karsch, H.H. *et al.*, *Chem. Ber.*, 1982, **115**, 823, (*synth, pmr, cmr, P-31 nmr*)

Terekhova, M.I. *et al.*, *Zh. Obshch. Khim.*, 1984, **54**, 82; *J. Gen. Chem. USSR (Engl. Transl.)*, 1984, **54**, 71, (*dioxide, disulfide*)

Kullberg, M.L. *et al.*, *Inorg. Chem.*, 1985, **24**, 3589, (*synth, pmr, cmr, P-31 nmr, complexes*)

Knueppel, P.C. *et al.*, *J. Organomet. Chem.*, 1988, **355**, 55, (*pe*)

Inorg. Synth., 1989, **25**, 120-122, (*synth*)

Synthetic Methods of Organometallic and Inorganic Chemistry, (ed. Hermann, W.A.), Thieme, 1996, **3**, 107-110, (*synth, pmr, P-31 nmr*)