



>>Entry Name: Bis(diphenylphosphino)acetylene

Synonym(s): 1,2-Ethynediylbis[diphenylphosphine], 9CI. 1,2-Bis(diphenylphosphino)ethyne

CAS Registry Number: 5112-95-8

$\text{Ph}_2\text{PC}\equiv\text{CPh}_2$

Molecular Formula: $\text{C}_{26}\text{H}_{20}\text{P}_2$

Molecular Weight: 394.391

Accurate Mass: 394.104024

Percentage Composition: C 79.18%; H 5.11%; P 15.71%

Use/Importance: Ligand for Pd, Pt and W

Physical Description: Air-stable cryst. (EtOH)

Melting Point: Mp 86°

>>Derivative: Dioxide

Synonym(s): 1,2-Bis(diphenylphosphinyl)ethyne

CAS Registry Number: 22428-64-4

Molecular Formula: $\text{C}_{26}\text{H}_{20}\text{O}_2\text{P}_2$

Molecular Weight: 426.39

Accurate Mass: 426.093854

Percentage Composition: C 73.24%; H 4.73%; O 7.50%; P 14.53%

Physical Description: Cryst. (Me₂CO/petrol)

Melting Point: Mp 164°

>>Derivative: Disulfide

Synonym(s): 1,2-Bis(diphenylphosphinothioyl)ethyne

CAS Registry Number: 22428-65-5

Molecular Formula: $\text{C}_{26}\text{H}_{20}\text{P}_2\text{S}_2$

Molecular Weight: 458.523

Accurate Mass: 458.048164

Percentage Composition: C 68.11%; H 4.40%; P 13.51%; S 13.99%

Physical Description: Needles (CHCl₃/EtOH)

Melting Point: Mp 186°

References:

- Charrier, C. *et al.*, *Bull. Soc. Chim. Fr.*, 1966, 1002, (*synth, ir*)
Hartmann, H. *et al.*, *Annalen*, 1968, **714**, 1, (*synth*)
Bart, J.C.J., *Acta Cryst. B*, 1969, **25**, 489, (*cryst struct*)
Schwartz, W.E. *et al.*, *Spectrochim. Acta A*, 1974, **30**, 1561, (*pe*)
Paasonen, R. *et al.*, *Org. Magn. Reson.*, 1978, **11**, 42, (*cmr, P-31 nmr*)
Orama, O. *et al.*, *Cryst. Struct. Commun.*, 1979, **8**, 409; 905, (*dioxide, disulfide, cryst struct*)
Colquhoun, I.J. *et al.*, *J.C.S. Dalton*, 1982, 1915, (*cmr, P-31 nmr*)
Anderson, D.M. *et al.*, *J. Organomet. Chem.*, 1989, **363**, C7, (*synth*)