



>>Entry Name: Bis(2-cyanoethyl)phenylphosphine

Synonym(s): 3,3'-(Phenylphosphinidene)bispropanenitrile, 10CI

CAS Registry Number: 15909-92-9

PhP(CH₂CH₂CN)₂

Molecular Formula: C₁₂H₁₃N₂P

Molecular Weight: 216.222

Accurate Mass: 216.081635

Percentage Composition: C 66.66%; H 6.06%; N 12.96%; P 14.33%

Use/Importance: Ligand for Mn and Pt

Physical Description: Cryst. (EtOH)

Melting Point: Mp 72-73°

Boiling Point: Bp_{0.2} 195-205°

pKa Value: pK_a 3.2 (H₂O)

Refractive Index: n_D²⁰ 1.5672

>>Derivative: Methiodide

Synonym(s): Bis(2-cyanoethyl)methylphenylphosphonium iodide

Physical Description: Cryst. (EtOH)

Melting Point: Mp 115°

>>Derivative: Oxide

Molecular Formula: C₁₂H₁₃N₂OP

Molecular Weight: 232.221

Accurate Mass: 232.07655

Percentage Composition: C 62.07%; H 5.64%; N 12.06%; O 6.89%; P 13.34%

Physical Description: Cryst. (2-propanol)

Melting Point: Mp 108-109°

>>Derivative: Sulfide

Molecular Formula: C₁₂H₁₃N₂PS

Molecular Weight: 248.288

Accurate Mass: 248.053705

Percentage Composition: C 58.05%; H 5.28%; N 11.28%; P 12.47%; S 12.91%

Physical Description: Solid

Melting Point: Mp 74-75°

References:

Mann, F.G. *et al.*, *J.C.S.*, 1952, 4453, (*synth, deriv*)

Rauhut, M.M. *et al.*, *J.A.C.S.*, 1959, **81**, 1103, (*oxide*)

Pellon, J. *et al.*, *J. Polym. Sci., Part A*, 1963, 863, (*sulfide*)

Schindlbauer, H., *Monatsh. Chem.*, 1963, **94**, 99, (*uv*)

Schiemenz, G.P. *et al.*, *Phosphorus Sulfur Relat. Elem.*, 1985, **21**, 259, (*uv*)