



>>Entry Name: Diethylphosphine, 9CI

CAS Registry Number: 627-49-6

Et₂PH

Molecular Formula: C₄H₁₁P

Molecular Weight: 90.105

Accurate Mass: 90.059837

Percentage Composition: C 53.32%; H 12.30%; P 34.38%

Physical Description: Liq.

Boiling Point: Bp 85°

Refractive Index: n_D²⁰ 1.4770

Other Data: Highly air-sensitive

Hazard & Toxicity: Highly toxic. Ignites in air

>>Derivative: Oxide

CAS Registry Number: 7215-33-0

Molecular Formula: C₄H₁₁OP

Molecular Weight: 106.104

Accurate Mass: 106.054752

Percentage Composition: C 45.28%; H 10.45%; O 15.08%; P 29.19%

Physical Description: Liq.

Boiling Point: Bp_{0.6} 53-55°

Refractive Index: n_D²⁰ 1.4549

Other Data: Dec. slowly at 180-200°. Tautomeric with Diethylphosphinous acid [GGV81-B](#)

>>Derivative: Sulfide

CAS Registry Number: 6591-06-6

Molecular Formula: C₄H₁₁PS

Molecular Weight: 122.171

Accurate Mass: 122.031907

Percentage Composition: C 39.33%; H 9.07%; P 25.35%; S 26.25%

Physical Description: Liq.

Boiling Point: Bp_{0.3} 51-55°

Refractive Index: n_D²⁰ 1.5350

Other Data: Tautomeric with diethylphosphonothious acid

References:

- Niebergall, H. *et al.*, *Chem. Ber.*, 1962, **95**, 64, (*synth*)
Maier, L. *et al.*, *J. Phys. Chem.*, 1962, **66**, 901, (*P-31 nmr*)
Maier, L., *Helv. Chim. Acta*, 1966, **49**, 1249, (*sulfide, ir, P-31 nmr*)
Hays, H.R., *J.O.C.*, 1968, **33**, 3690, (*oxide, ir, pmr, P-31 nmr*)
Cullen, W.R. *et al.*, *J. Fluorine Chem.*, 1971, **1**, 227, (*pe*)
Kostyanovskii, R.G. *et al.*, *Org. Mass Spectrom.*, 1972, **6**, 1183, (*ms*)
Rasulev, U.Kh. *et al.*, *Zh. Obshch. Khim.*, 1974, **44**, 2198; *J. Gen. Chem. USSR (Engl. Transl.)*, 1974, **44**, 2158, (*ms*)
Kabachnik, M.F. *et al.*, *Aust. J. Chem.*, 1975, **28**, 755, (*ir*)
Mosbo, J.A. *et al.*, *Phosphorus Sulfur Relat. Elem.*, 1981, **11**, 11, (*struct*)
Antberg, M. *et al.*, *Inorg. Chem.*, 1984, **23**, 4170, (*synth, pmr*)
Kyba, E.P. *et al.*, *Inorg. Chem.*, 1985, **24**, 1613, (*sulfide, synth*)
Aksnes, G. *et al.*, *Phosphorus Sulfur Relat. Elem.*, 1986, **26**, 261, (*oxide, synth, reactions*)
Keck, H. *et al.*, *Phosphorus Sulfur Relat. Elem.*, 1987, **34**, 169, (*sulfide, ms*)
Majewski, P., *Synthesis*, 1987, 554, (*synth, P-31 nmr*)
Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, DJW000
Bretherick, L., *Handbook of Reactive Chemical Hazards*, 4th edn., Butterworths, 1990, 1629
Luxon, S.G., *Hazards in the Chemical Laboratory*, 5th edn., Royal Society of Chemistry, 1992, 464