



>>Entry Name: Hexapropylphosphorous triamide, 9CI

Synonym(s): Tris(*N,N*-dipropylamino)phosphine

CAS Registry Number: 5848-64-6

$\text{P}[\text{N}(\text{CH}_2\text{CH}_2\text{CH}_3)_2]_3$

Molecular Formula: $\text{C}_{18}\text{H}_{42}\text{N}_3\text{P}$

Molecular Weight: 331.524

Accurate Mass: 331.311634

Percentage Composition: C 65.21%; H 12.77%; N 12.67%; P 9.34%

Physical Description: Liq.

Boiling Point: $\text{Bp}_{0.15}$ 101-103°

Refractive Index: n_{D}^{20} 1.4721

Rare Chemicals Library: S61902-7

>>Derivative: Oxide

Synonym(s): Hexapropylphosphoric triamide. Tris(*N,N*-dipropylamino)phosphine oxide

CAS Registry Number: 13987-57-0

Molecular Formula: $\text{C}_{18}\text{H}_{42}\text{N}_3\text{OP}$

Molecular Weight: 347.523

Accurate Mass: 347.306549

Percentage Composition: C 62.21%; H 12.18%; N 12.09%; O 4.60%; P 8.91%

Physical Description: Liq.

Boiling Point: $\text{Bp}_{0.2}$ 125°

pKa Value: $\text{pK}_{\text{a}2}$ 7.15 (MeNO_2)

Refractive Index: n_{D}^{20} 1.4630

>>Derivative: Sulfide

Synonym(s): Hexapropylphosphorothioic triamide. Tris(*N,N*-dipropylamino)phosphine sulfide

CAS Registry Number: 33712-82-2

Molecular Formula: $\text{C}_{18}\text{H}_{42}\text{N}_3\text{PS}$

Molecular Weight: 363.59

Accurate Mass: 363.283704

Percentage Composition: C 59.46%; H 11.64%; N 11.56%; P 8.52%; S 8.82%

Physical Description: Liq.

Boiling Point: $\text{Bp}_{0.01}$ 108-112°

References:

- Stuebe, C. *et al.*, *J.A.C.S.*, 1956, **78**, 976, (*synth, derivs*)
Coustures, Y. *et al.*, *Bull. Soc. Chim. Fr.*, Part I, 1973, 926, (*oxide, ir, P nmr*)
Hargis, J.K. *et al.*, *Inorg. Chem.*, 1977, **16**, 1686, (*pe*)
Ando, F. *et al.*, *Bull. Chem. Soc. Jpn.*, 1978, **51**, 1481, (*sulfide, pmr, ir*)
Marchenko, A.P. *et al.*, *Zh. Obshch. Khim.*, (*Engl. transl.* p. 501), 1978, **48**, 551, (*oxide*)
Bergesen, K. *et al.*, *Acta Chem. Scand., Ser. A*, 1981, **35**, 147, (*cmr*)