>>**Entry Name: Dibromotriphenylphosphorane,** 9Cl, 8Cl
Synonym(s): Triphenylphosphine dibromide. Bromotriphenylphosphonium bromide

CAS Registry Number: 1034-39-5

Ph_3PBr_2

Molecular Formula: $C_{18}H_{15}Br_2P$
Molecular Weight: 422.098
Accurate Mass: 419.967809
Percentage Composition: C 51.22%; H 3.58%; Br 37.86%; P 7.34%
General Statement: Ionises in soln. to $Ph_3PBr^{(+)}Br^{(-)}$
Use/Importance: Brominating agent, used to cleave ethers, esters and lactones to give alkyl bromides or acyl bromides. Converts phenols into acyl bromides, and deoxygenates epoxides. Brominates αβ-unsatd. ketones at the β-posn. Used in synth. of β-lactams. Converts ureas into carbodiimides and amides into ω-bromoalkanoic esters; benzoins into benzils
Physical Description: Large hygroscopic cryst.
Melting Point: Mp 260-270°
Solubility: Sol. DMF
Other Data: Rapidly dec. in air/moisture to give a mixed salt Mp 140-141°

Aldrich: 27094-6
Fluka: 93095

>>**Derivative:** Br_2 adduct
Synonym(s): Bromotriphenylphosphonium tribromide

Molecular Formula: $C_{18}H_{15}Br_4P$
Molecular Weight: 581.906
Accurate Mass: 577.844481
Percentage Composition: C 37.15%; H 2.60%; Br 54.93%; P 5.32%
Physical Description: Orange cryst.
Melting Point: Mp 117°
Other Data: Ionic

>>**Derivative:** I_2 adduct

Molecular Formula: $C_{18}H_{15}Br_2I_2P$
Molecular Weight: 675.907
Accurate Mass: 673.776755
Percentage Composition: C 31.99%; H 2.24%; Br 23.64%; I 37.55%; P 4.58%
Physical Description: Red needles
Melting Point: Mp 79°

References:

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1682C, *(nmr)*
Beveridge, A.D. *et al.*, *J.C.S.(A)*, 1966, 520, *(synth, struct)*
Levy, D. *et al.*, *J.O.C.*, 1967, **32**, 1265, *(use)*
Bestmann, H.J. *et al.*, *Annalen*, 1968, **718**, 24, *(use)*
Okada, I. *et al.*, *Bull. Chem. Soc. Jpn.*, 1970, **43**, 1185, *(use)*
Anderson, A.G. *et al.*, *J.O.C.*, 1972, **37**, 626, *(use)*
Ho, T.*, Synthesis*, 1972, 697, *(use)*
Appel, R. *et al.*, *Chem. Ber.*, 1973, **106**, 3450, *(use)*
Org. Synth., Coll. Vol., 5, 1973, 142; 249, *(use)*
De Wit, J. *et al.*, *Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1973, **92**, 281, *(use)*
Smissman, E.E. *et al.*, *J.O.C.*, 1975, **40**, 1640, *(use)*
Burton, D.J. *et al.*, *J.O.C.*, 1975, **40**, 3026, *(use)*
Machinek, R. *et al.*, *Synthesis*, 1975, 255, *(use)*
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1977, **6**, 645; **10**, 60; **7**, 109; **9**, 112; **13**, 333; **7**, 407; **12**, 554, *(use)*
Briggs, E.M. *et al.*, *Synthesis*, 1980, 295, *(use)*
Buono, G.*, Synthesis*, 1981, 872, *(use)*
Piers, E. *et al.*, *Can. J. Chem.*, 1982, **60**, 210, *(use)*
Molina, P. *et al.*, *Synthesis*, 1982, 596, *(use)*
Cossio, F.P. *et al.*, *Tet. Lett.*, 1985, **26**, 3041, *(use)*
Aizpurua, J.M. *et al.*, *J.O.C.*, 1986, **51**, 4941, *(use)*
Vogt, H. *et al.*, *Z. Naturforsch., B*, 1993, **48**, 258, *(cryst struct)*