



>>Entry Name: Tris(2-methylpropyl)phosphine, 9CI

Synonym(s): Triisobutylphosphine

CAS Registry Number: 4125-25-1

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

Molecular Formula: $\text{C}_{12}\text{H}_{27}\text{P}$

Molecular Weight: 202.319

Accurate Mass: 202.185037

Percentage Composition: C 71.24%; H 13.45%; P 15.31%

Use/Importance: Ligand for many heavy metals

Physical Description: Liq.

Boiling Point: Bp 215°. Bp_{0.1} 51-60°

Refractive Index: n_D^{25} 1.4530

Aldrich: 39511-0

>>Derivative: Methiodide

Synonym(s): Methyltris(2-methylpropyl)phosphonium iodide

Molecular Formula: $\text{C}_{13}\text{H}_{30}\text{IP}$

Molecular Weight: 344.258

Accurate Mass: 344.112985

Percentage Composition: C 45.36%; H 8.78%; I 36.86%; P 9.00%

Physical Description: Solid

Melting Point: Mp 287-288°

>>Derivative: Oxide

CAS Registry Number: 7682-87-3

Molecular Formula: $\text{C}_{12}\text{H}_{27}\text{OP}$

Molecular Weight: 218.318

Accurate Mass: 218.179952

Percentage Composition: C 66.02%; H 12.46%; O 7.33%; P 14.19%

Melting Point: Mp 89°. Mp 123-125°

Boiling Point: Bp₄ 119-120°

>>Derivative: Sulfide

CAS Registry Number: 3982-87-4

Molecular Formula: $\text{C}_{12}\text{H}_{27}\text{PS}$

Molecular Weight: 234.385

Accurate Mass: 234.157107

Percentage Composition: C 61.49%; H 11.61%; P 13.21%; S 13.68%

Use/Importance: Extractant for Hg, Pd

Melting Point: Mp 59-60°

Fluka: 92036

References:

Davies, W.C. *et al.*, *J.C.S.*, 1929, 1262, (*synth*)

Malatesta, L., *Gazz. Chim. Ital.*, 1947, **77**, 509; *CA*, **42**, 5411, (*sulfide*)

Petrov, K.A. *et al.*, *Zh. Obshch. Khim.*, 1960, **30**, 2995; *J. Gen. Chem. USSR (Engl. Transl.)*, 1960, **30**, 2967, (*oxide*)

Quin, L.D. *et al.*, *Org. Magn. Reson.*, 1974, **6**, 503, (*cmr*, *P-31 nmr*, *sulfide*)

Wolfsberger, W. *et al.*, *Synth. React. Inorg. Met.-Org. Chem.*, 1974, **4**, 149, (*synth*)