



>>Entry Name: Tetrakis(triphenylphosphine)palladium(0)

CAS Registry Number: 14221-01-3

$\text{Pd}(\text{PPh}_3)_4$ (T_d)

Molecular Formula: $\text{C}_{72}\text{H}_{60}\text{P}_4\text{Pd}$

Molecular Weight: 1155.581

Accurate Mass: 1154.268026

Percentage Composition: C 74.84%; H 5.23%; P 10.72%; Pd 9.21%

Source/Synthesis: Synth. from PdCl_2 , PPh_3 and $\text{N}_2\text{H}_4\cdot\text{H}_2\text{O}$, or other reducing agents

Use/Importance: Commercially available. Extremely versatile catalyst for alkene and alkyne reactions, additions and oligomerisations; condensation reactions, coupling of organic halides and organometallics; hydrosilylations; carbonylations and cleavage reactions of organosilanes and organostannanes and other reactions of small molecules.

Used in total synth. of e.g. Dynemicin A and taxol®. Also catalyses thiocarbonylation of propargylic alcohols with CO and thiols

Physical Description: Light-sensitive yellow solid

Melting Point: Mp 100-105°

Solubility: Mod. sol. CHCl_3 , DME, THF, DMF, C_6H_6 , toluene; insol. satd. hydrocarbons

Other Data: Unstable in air, dec. at 115°

Aldrich: 21666-6

Fluka: 87645

References:

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Malatesta, L. *et al.*, *J.C.S.*, 1957, 1118, (*synth*)

Inorg. Synth., 1972, **13**, 121, (*synth*)

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **3**, 2013, (*synth*)

Townsend, J.M. *et al.*, *J.O.C.*, 1975, **40**, 2976, (*synth, ir*)

Andrianov, V.G. *et al.*, *J. Struct. Chem. (Engl. Transl.)*, 1976, **17**, 112, (*struct*)

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Nefedov, V.I. *et al.*, *Inorg. Chim. Acta*, 1979, **35**, L343, (*pe*)

Baldy, A. *et al.*, *Bull. Soc. Chim. Fr.*, 1981, 67, (*pe*)

Bemi, L. *et al.*, *J.A.C.S.*, 1982, **104**, 438, (*P-31 nmr*)

Wang, Y. *et al.*, *J. Mol. Catal.*, 1988, **45**, 127, (*pe, use*)

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Han, H.-B. *et al.*, *J.A.C.S.*, 1996, **118**, 1571, (*use*)

Xiao, W.-J. *et al.*, *J.O.C.*, 1997, **62**, 3422-3423, (*use, thiocarbonylation*)

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