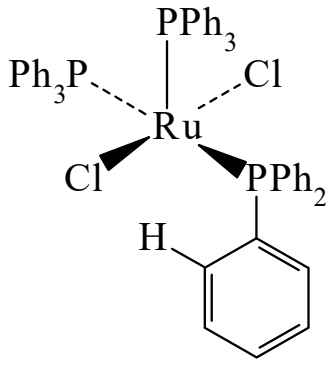
>>**Entry Name: Dichlorotris(triphenylphosphine)ruthenium(*II*)**
Synonym(s): Tris(triphenylphosphine)ruthenium chloride



CAS Registry Number: 15529-49-4

Molecular Formula: $C_{54}H_{45}Cl_2P_3Ru$
Molecular Weight: 958.846
Accurate Mass: 958.115463
Percentage Composition: C 67.64%; H 4.73%; Cl 7.39%; P 9.69%; Ru 10.54%
General Statement: Distorted square-pyramidal struct., with sixth coord. site blocked by a phenyl group of one of the basal ligands. Dissociates in soln. to give (in equilibrium) dimeric Dichlorobis(triphenylphosphine)ruthenium(*II*) GJJ98-Y and free PPh_3 (in non-polar solvs.) or $RuCl(PPh_3)_2^{(+)}$, which is not so well defined (in polar solvs.). Ru-Cl 238.8, Ru-$P_{P\ trans\ to\ P}$ 237.4, 241.2, Ru-P_{apical} 223 pm
Source/Synthesis: Prep. by treating $RuCl_3.xH_2O$ with PPh_3 in boiling MeOH
Use/Importance: Hydrosilation and homogeneous catalytic transfer-hydrogenation catalyst; catalyst for isomerisation of alkenes and for electrophilic addition of halogenated compds. to alkenes. One of the most important synthetic reagents and catalysts in Ru chemistry. Also catalyses the reaction of alkane- and arenesulfonyl chlorides with silyl enol ethers to give β-keto sulfones; catalyses hydrogenation of nitro groups, imines and ketones and the selective oxidn. of alcohols. Catalyses reaction of homoallylic alcohols with diols, giving monoallyl ethers via a rearrangement reaction
Physical Description: Red-brown or shiny black cryst., air-sensitive in soln.
Melting Point: Mp 132-134°
Solubility: Sol. $CHCl_3$, Me_2CO, C_6H_6, EtOAc, toluene, CH_2Cl_2
Other Data: Ir ν_{RuCl} 315 cm^{-1}

Aldrich: 22366-2
Fluka: 93405
Sigma: T3906

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