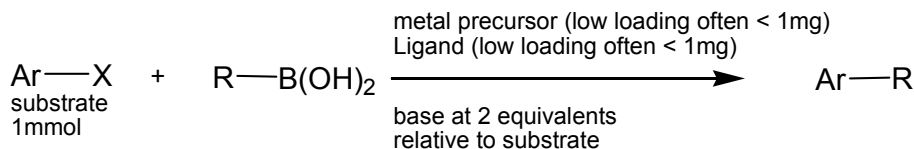


STREM Catkit Single Use Vials for low catalyst loading experiments

metals · inorganics · organometallics · catalysts · ligands · custom synthesis · cGMP facilities · nanomaterials

Limited substrate availability, expense, convenience or safety may drive the need or preference for small scale reactions. However, weighing less than 1mg of catalysts and ligands for such small scale reactions can be difficult, especially if precise ratios of metal precursor and ligand are required eg. Suzuki Miyaura Coupling.

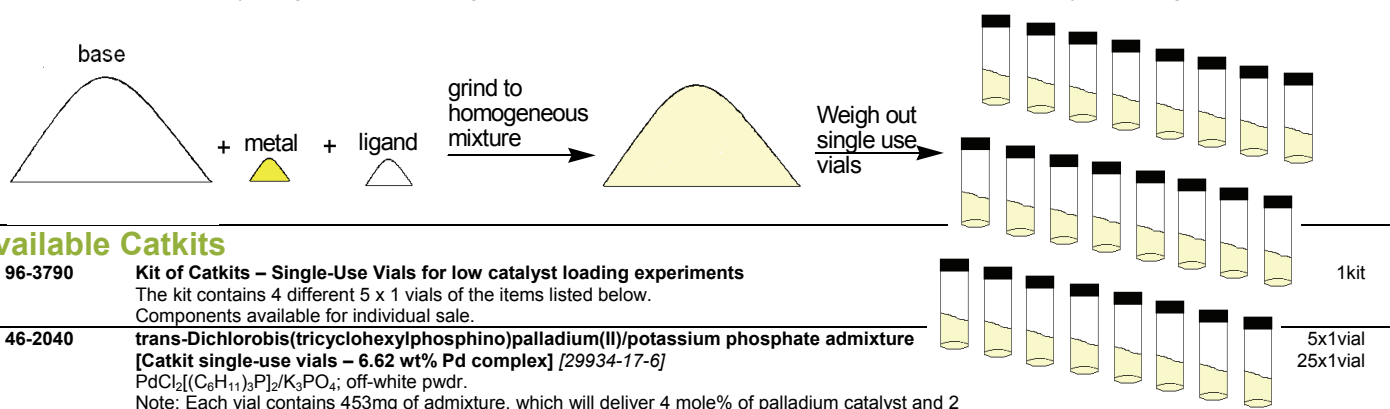


The **Table 1** below shows the quantity of metal precursor and ligand needed for a 2mol% loading of catalyst using 25mg of substrate with a molecular weight of 350.

Metal Precursor	Weight	Ligand	Weight
Pd ₂ (dba) ₃	0.65mg	SPhos	0.59mg
Pd(OAc) ₂	0.32mg	P(t-Bu) ₃	0.29mg
CuI	0.27mg	dtbpf	0.68mg

These quantities cannot be consistently weighed out. The practical issue of accurately weighing out small quantities of components can be resolved by the use of Admixtures (See Sharpless AD-Mix, *J. Org. Chem.*, **1992**, *57*, 2771-3)

The metal precursor and ligand can be "diluted" with a suitable base by grinding the mixture of components until homogeneous. This mixture can then be easily weighed out into single use vials so that each contains a known but low catalyst loading.



Available Catkits

96-3790 Kit of Catkits – Single-Use Vials for low catalyst loading experiments

The kit contains 4 different 5 x 1 vials of the items listed below. Components available for individual sale.

46-2040 trans-Dichlorobis(tricyclohexylphosphino)palladium(II)/potassium phosphate admixture [Catkit single-use vials – 6.62 wt% Pd complex] [29934-17-6]

PdCl₂[(C₆H₁₁)₃P]₂/K₃PO₄; off-white powder.

Note: Each vial contains 453mg of admixture, which will deliver 4 mole% of palladium catalyst and 2 equivalents of base, to a reaction using 1 mmole of substrate.

Weight-percent of components: 6.62wt% palladium complex 93.38 wt% potassium phosphate

46-2038 trans-Dichlorobis(triphenylphosphine)palladium(II)/potassium phosphate admixture [Catkit single-use vials – 6.32wt % complex] [13965-03-2]

PdCl₂[P(C₆H₅)₃]₂/K₃PO₄; off-white powder.

Note: Each vial contains 453mg of admixture, which will deliver 4 mole% of palladium catalyst and 2 equivalents of base, to a reaction using 1 mmole of substrate.

Weight-percent of components: 6.32wt% palladium complex 93.68 wt% potassium phosphate

46-2030 Palladium(II) acetate/1,1'-bis(di-t-butylphosphino)ferrocene/potassium phosphate admixture [Catkit single-use vials – 2.02 wt% Pd(OAc)₂] [95408-45-0]

off-white powder.

Note: Each vial contains 453mg of admixture, which will deliver 4 mole% of palladium catalyst and 2 equivalents of base, to a reaction using 1 mmole of substrate.

Weight-percent of components: 2.02 wt% palladium acetate 4.28 wt% phosphine ligand 93.7 wt% potassium phosphate

46-2033 Palladium(II) acetate/2-dicyclohexylphosphino-2,6-dimethoxy-1,1'-biphenyl (SPhos)/potassium phosphate admixture [Catkit single-use vials – 1.96 wt% Pd(OAc)₂] [1028206-58-7]

off-white powder.

Note: Each vial contains 453mg of admixture, which will deliver 4 mole% of palladium catalyst and 2 equivalents of base, to a reaction using 1 mmole of substrate.

Weight-percent of components: 1.96wt% palladium acetate 7.17 wt% phosphine ligand 90.8 wt% potassium phosphate

For detailed description of the Catalyst Kit approach ("Catkit") see J.C. Ruble "Making Catalysis Simple", *New Horizons in Catalysis*, 4 December 2009.

Also Available

29-0490 Copper(I) iodide/cesium carbonate admixture [5.50 wt% CuI] [7681-65-4]

CuI/Cs₂CO₃; off-white powder.

Weight-percent of components: 5.50 wt% copper(I) iodide 94.50 wt% cesium carbonate

5g
25g

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