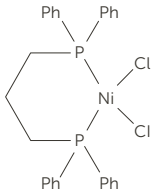
1,3-[Bis(diphenylphosphino)propane] nickel(II) chloride

Product number: 416 | Alternative name: $NiCl_2$(dppp) | CAS number: 15629-92-2 | $C_{27}H_{26}Cl_2NiP_2$ | Molecular weight: 542.04

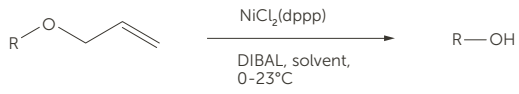
$NiCl_2$(dppp) is an air stable, dark red or purple square planar complex. $NiCl_2$(dppp) is a very useful catalyst in preparation of C-C bonds via coupling with Grignard (Kumada reaction) and zinc (Negishi reaction) reagents.



NICKEL-CATALYZED CROSS-COUPLING WITH ZINC AND GRIGNARD REAGENTS [1–12]

R, R′ = alkyl, alkenyl, aryl heterocyclic
X = halides, dialkylcarbonates, arenesulfonates, heteraromatic ethers, phosphates
Y = Zn, Mg

FACILE AND SELECTIVE DEALLYLATION OF ETHERS, AMINES, AND AMIDES [13,14]



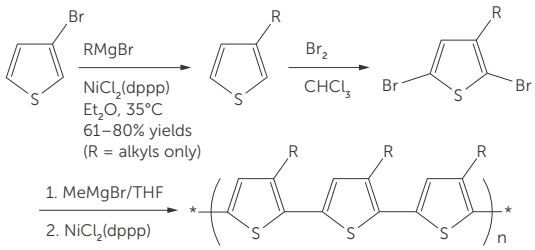
R = alkyl, alkenyl, aryl, carbohydrates

71 – 97% yield

51 – 95% yield

R = H, alkyl
R′ = H, Me, Bn, $CH_2CH=C(Me)_2$, allyl, p-$tolSO_2$, C(O)R″
R/R′ = heterocycles

PREPARATION OF HIGHLY CONDUCTIVE, REGIOREGULAR POLYMERS [15,16]

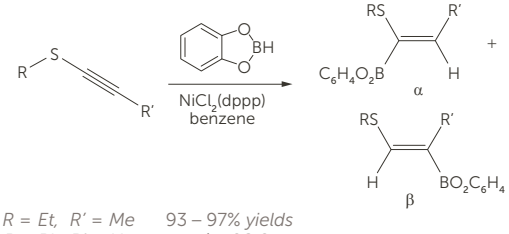


R = alkyls, alkoxys, esters

HT regioregularity 91 to >99%

Mw range 12,000 up to 50,000 PDIs = 1.1 to 1.78

HYDROBORONYLATION OF THIOALKYNES [17]



a: R = Et, R′ = Me
b: R = Ph, R′ = H

93 – 97% yields
β/α: 98:2

References

[1] Erdelmeier, I. and Gais, H.-J., *J. Am. Chem. Soc.*, **1989**, *111*, 1125.

[2] Tagat, J.R., McCombie, S.W., Barton, B.E., Jackson, J., and Shortall, J., *Bioorg. Med. Chem. Lett.*, **1995**, *5*(18), 2143.

[3] Tamao, K., Kiso, Y., Sumitani, K., and Kumada, M., *J. Am. Chem. Soc.*, **1972**, *94*, 9268.

[4] Sengupta, S., Leite, M., Raslan, D.S., Quesnelle, C., and Snieckus, V., *J. Org. Chem.*, **1992**, *57*, 4066.

[5] Organ, M.G. and Murray, A.P., *J. Org. Chem.*, **1997**, *62*, 1523.

[6] Hopf, H. and Theurig, M., *Angew. Chem. Chem. Int. Ed.*, **1994**, *33*(10), 1099.

[7] Bigas, A.F. and Johnston, R.A.W., *J. Chem. Soc., Perkins Trans. 1*, **2000**, 1735.

[8] Poree, J.-H., Clavel, A., Betzer, J.-F., Pancrazi, A., and Ardisson, J., *Tetrahedron Lett.*, **2003**, *44*, 7553.

[9] Kitamura, M. and Narasaka, K., *Org. Syn.*, **2001**, *78*, 42.

[10] Cho, C.-H., Sun, M., Seo, Y.-S., Kim, C.-B., and Park, K., *J. Org. Chem.*, **2005**, *70*, 1482.

[11] Sofia, A., Karlstrom, E., Itami, K., and Backvall, J.-E., *J. Org. Chem.*, **1999**, *64*, 1745.

[12] Mans, D.M. and Pearson, W.H., *J. Org. Chem.*, **2004**, *69*, 6419.

[13] Taniguchi, T. and Ogasawara, K., *Angew. Chem. Int. Ed.*, **1998**, *37*(8), 1136.

[14] Taniguchi, T. and Ogasawara, K., *Tetrahedron Lett.*, **1998**, *39*, 4679.

[15] McCullough, R.D. and Lowe, R.D., *J. Chem. Soc., Chem. Commun.*, **1992**, 70.

[16] Amarasekara, A.S. and Pomerantz, M., *Synlett*, **2003**, 2255.

[17] Gridnev, I.D., Miyaura, N., and Suzuki, A., *Organometallics*, **1993**, *12*, 589.

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