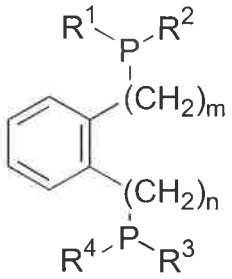
Claims

1. Process comprising the process steps of:
   a) initially charging an ether having from 3 to 30 carbon atoms;
   b) adding a phosphine ligand and a compound comprising Pd,
      or adding a complex comprising Pd and a phosphine ligand;
   c) feeding in CO;
   d) heating the reaction mixture, with conversion of the ether; wherein the phosphine ligand is a compound of formula (**I**)



(**I**)

where

m and n are each independently 0 or 1;

R^1, R^2, R^3, R^4 are each independently selected from -(C_1-C_{12})-alkyl, -(C_3-C_{12})-cycloalkyl, -(C_3-C_{12})-heterocycloalkyl, -(C_6-C_{20})-aryl, -(C_3-C_{20})-heteroaryl;

at least one of the R^1, R^2, R^3, R^4 radicals is a -(C_3-C_{20})-heteroaryl radical;

and

R^1, R^2, R^3, R^4, if they are -(C_1-C_{12})-alkyl, -(C_3-C_{12})-cycloalkyl, -(C_3-C_{12})-heterocycloalkyl, -(C_6-C_{20})-aryl or -(C_3-C_{20})-heteroaryl,

may each independently be substituted by one or more substituents selected from -(C_1-C_{12})-alkyl, -(C_3-C_{12})-cycloalkyl, -(C_3-C_{12})-heterocycloalkyl, -O-(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl-(C_6-C_{20})-aryl, -O-(C_3-C_{12})-cycloalkyl, -S-(C_1-C_{12})-alkyl, -S-(C_3-C_{12})-cycloalkyl, -COO-(C_1-C_{12})-alkyl, -COO-(C_3-C_{12})-cycloalkyl, -CONH-(C_1-C_{12})-alkyl, -CONH-(C_3-C_{12})-cycloalkyl, -CO-(C_1-C_{12})-alkyl, -CO-(C_3-C_{12})-cycloalkyl, -N-[(C_1-C_{12})-alkyl]$_2$, -(C_6-C_{20})-aryl, -(C_6-C_{20})-aryl-(C_1-C_{12})-alkyl, -(C_6-C_{20})-aryl-O-(C_1-C_{12})-alkyl, -(C_3-C_{20})-heteroaryl, -(C_3-C_{20})-heteroaryl-(C_1-C_{12})-alkyl, -(C_3-C_{20})-heteroaryl-O-(C_1-C_{12})-alkyl, -COOH, -SO_3H, -NH_2, halogen; and wherein no alcohol is added to the reaction mixture.

2. Process according to Claim 1,