Title (en)

METHOD FOR PREPARING CHIRAL DIPHOSPHINES

Title (de)

VERFAHREN ZUR HERSTELLUNG VON CHIRALEN DIPHOSPHINEN

Title (fr)

PROCEDE DE PREPARATION DE DIPHOSPHINES CHIRALES

Publication

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Application

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Abstract (en)

[origin: FR2789992A1] Preparation of dicyano-2,2'-bis-(disubstituted phosphino)-1,1'-binaphthyl or biphenyl derivatives (I) comprises: (1) brominating a 2,2'-diol; (2) esterifying the obtained dibromo compound (III) using a sulfonic acid; (3) replacing the Br atoms with cyano by reacting with a nucleophile and (4) coupling with a disubstituted phosphine in presence of transition metal catalyst. Preparation of dicyano-2,2'-bis-(disubstituted phosphino)-1,1'-binaphthyl or biphenyl of formula (I) comprises: (1) brominating a 2,2'-diol of formula (II); (2) esterifying the obtained dibromo compound of formula (III) using a sulfonic acid or its activated derivative; (3) replacing the Br atoms of (III) with cyano groups by reacting the obtained disulfonate with a suitable nucleophile and (4) coupling with a phosphine of formula X-P(Ar<1>)Ar<2> (VI) in the presence of a transition metal-based catalyst. A = naphthyl or phenyl; Ar<1>, Ar<2> = saturated or aromatic carbocyclic group and X = H or halo. Independent claims are included for the following: (i) the preparation of diamine compounds of formula (VII) by reducing (I); (ii) a process as above but including the additional step of converting (I), in basic or acid medium, into the corresponding dicarboxylic acid of formula (A); (iii) new compounds (VII) and (iv) new disulfonate intermediates of formula (IV). P' = aliphatic hydrocarbyl (optionally substituted by carbocyclic aryl) or carbocyclic aryl; provided that P' is other than CF3 or p-tolyl.

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IPC 8 full level

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C-Set (source: EP US)

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