

Innovative phosphane ligands for catalysis*

The innovation

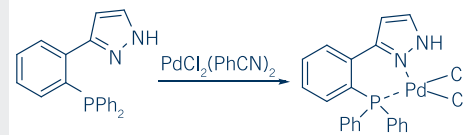
In the chemical and pharmaceutical industry, catalyzed reactions play a superior role in the field of preparing complex structures e.g. pharmaceutical agents. In the past years, many systems have been developed which are appropriate for individual applications.

This process allows the preparation of heterocyclic phosphanes being effective as ligands for metal catalyzed reactions. The invention shows many advantages for the chemical industry, especially for several reaction types such as hydrogenation, coupling reactions and chiral catalysis.

What is new is the combination of a phosphane and a heterocycle working as a

nitrogen donor (especially pyrazoles, pyrimidines and oxazoles) which leads to an increased complex formation with metal centres and arranges a higher stability of required catalyst systems.

The construction of the heterocycle ensues gradually and is based on acetyl aggregations of the aromatic system. Because of a highly effective synthetic route, phosphanes and phosphane oxides, -sulfides and -selenides can be synthesized easily. During the synthesis, a set of different substituents is tolerated which allows to generate quickly a library of ligands and catalyst systems for all imaginable applications.



Advantages at a glance

- Innovative, easy and highly efficient synthetic route
- Combination of phosphane and heterocycle, working as nitrogen donor
- Formation of a complex with transition metals to form innovative catalyst systems

Keywords

- Heterocyclic phosphane ligands
- Phosphanes, phosphane oxides, -sulfides und -selenides
- Catalysis
- Agent synthesis

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Areas of application

- Fine chemicals manufacturers
- Production of pharmaceuticals

Patent status

The invention is filed internationally and partially granted. It is owned by ZYLUM Beteiligungsgesellschaft mbH & Co. Patente II KG. The application was filed in October 1999.



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