

Title (en)  
BISPHOSPHINIC METAL COMPLEXES, PROCESS FOR THEIR PREPARATION, HYDROGENATION CATALYSTS FROM THESE COMPOUNDS,  
AND A HYDROGENATION PROCESS EMPLOYING THESE CATALYSTS

Publication  
**EP 0000403 B1 19810617 (DE)**

Application  
**EP 78100422 A 19780718**

Priority  
• GB 7828154 A 19780628  
• US 81623577 A 19770718

Abstract (en)  
[origin: EP0000403A1] 1. A compound of the formula see diagramm : EP0000403,P20,F2 wherein R\*\*3 and R\*\*4 are C1 -C20 alkyl or aryl, namely phenyl, naphthyl, anthryl, phenanthryl or azulyl ; Y' is carbon ; Q\*\*1 and Q\*\*2 are methylene or oxygen ; P is phosphorus ; Ar is substituted or unsubstituted aryl, namely phenyl, naphthyl, anthryl, phenanthryl or azulyl ; M is a Group Ib or IIb metal ; X is halide ; perchlorate, tetra(fluoro or chloro)borate, hexa(fluoro or chloro)phosphate, or hexa(fluoro or chloro)-antimonate or tetraphenylborate ; n is 0 or 1, with the proviso that when n = 0, Q\*\*1 and Q\*\*2 are methylene and the broken line is a carbon-carbon bond and when n = 1, Q\*\*1 and Q\*\*2 are oxygen where each oxygen is bonded to Y' ; u is an integer from 1 to 3 ; r and s are 1 or 2 depending on the valence of M and the value of u or the dimers or oligomers thereof.

IPC 1-7  
**C07F 9/50**; **B01J 31/24**

IPC 8 full level  
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Cited by  
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