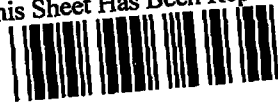


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Abstract

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PROCESS FOR THE CARBONYLATION OF

METHANOL OR A REACTIVE DERIVATIVE THEREOF

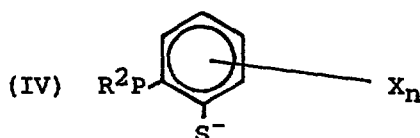
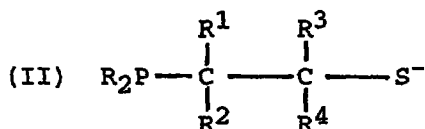
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A process for the liquid phase carbonylation of methanol or a reactive derivative thereof comprises contacting carbon monoxide with a liquid reaction composition comprising methanol or a reactive derivative thereof, a halogen promoter and a rhodium catalyst system comprising a rhodium component and a bidentate phosphorus-sulphur ligand, the ligand comprising a phosphorus dative centre linked to a sulphur dative or anionic centre by a substantially unreactive backbone structure comprising two connecting carbon atoms or a connecting carbon and a connecting phosphorus atom.

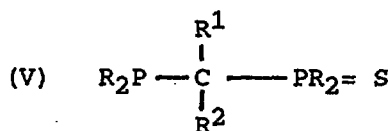
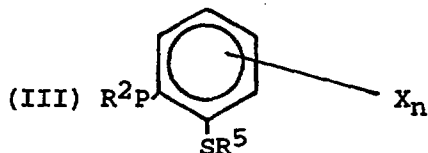
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Novel rhodium ligand complexes of formula $[\text{Rh}(\text{CO})\text{L}]_m$ and $[\text{Rh}(\text{CO})\text{LY}]$ wherein Y is a halogen, m is a number less than 10 and L is :

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wherein the R groups are independently selected from C₁ to C₂₀

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alkyl, cycloalkyl, aryl, substituted aryl and optionally substituted aralkyl; the R^5 groups are selected from hydrogen, C_1 to C_{20} alkyl, cycloalkyl, aryl, substituted aryl, acyl and optionally substituted aralkyl groups; the R^1 to R^4 groups are independently selected from hydrogen, C_1 to C_{20} alkyl and optionally substituted aralkyl; X is a non-coordinating substituent such as C_1 to C_{20} alkyl, cycloalkyl, aryl, substituted aryl, C_1 to C_{20} alkoxy, C_1 to C_{20} alkylthio, trialkylsilyl or triarylsilyl, preferably, $Si(CH_3)_3$ or methyl and n is 0 to 4 preferably 0 or 1.

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