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(54) Title: LIGANDS FOR PNICOGEN CHELATE COMPLEXES WITH A METAL OF SUBGROUP VIII AND USE
OF THE COMPLEXES AS CATALYSTS FOR HYDROFORMYLATION, CARBONYLATION, HYDROCYANATION OR
HYDROGENATION

(54) Bezeichnung: LIGANDEN FÜR PNICOGENCHELATKOMPLEXE MIT EINEM METALL DER VIII. NEBENGRUPPE
UND VERWENDUNG DER KOMPLEXE ALS KATALYSATOREN FÜR HYDROFORMYLIERUNG, CARBONYLIERUNG,
HYDROCYANIERUNG ODER HYDRIERUNG

(57) Abstract: The invention relates to pnicoogen chelate compounds that have two groups, which contain pnicoogen atoms, and are
bound to one another via an xanthene-like or triptycene-like molecular skeleton. At least one pyrrole group is covalently bound via
its nitrogen atom to each pnicoogen atom. The invention also relates to catalysts consisting of a complex of a metal from subgroup
VIII with at least one pnicoogen compound serving as a ligand, and to a method for hydroformylating olefins.

(57) Zusammenfassung: Die vorliegende Erfindung betrifft Pnicogenchelateverbindungen, die zwei Pnicogenatome enthaltende
Gruppen haben, welche über ein Xanthen-artiges oder Triptycen-artigen Molekülgerüst miteinander verbunden sind und wobei an
jedes Pnicogenatom mindestens eine Pyrrolgruppe über deren Stickstoffatom kovalent gebunden ist, Katalysatoren aus einem Kom-
plex eines Metalls aus der VIII. Nebengruppe mit mindestens einer Pnicogenchelateverbindung als Liganden sowie ein Verfahren zur
Hydroformylierung von Olefinen.

WO 02/083695 A1