

# JOURNAL OF ORGANOMETALLIC CHEMISTRY

CUMULATIVE SUBJECT INDEX: Vol. 176 (1979) — 200 (1980)

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- Carbonyl-hydrido-clusters, UV photoelectron spectral studies and development of a topological bonding model

**Abstract:** The reaction of  $\text{Ni}(\text{CO})_2(\text{P}(\text{R})_3)_2$  with  $\text{C}_6\text{H}_5\text{COCl}$  and  $\text{C}_6\text{H}_5\text{COBr}$  in the presence of  $\text{C}_6\text{H}_5\text{MgCl}$  yields  $\text{Ni}(\text{CO})_2(\text{C}_6\text{H}_5\text{CO})_2$  and  $\text{Ni}(\text{CO})_2(\text{C}_6\text{H}_5\text{CO})\text{C}_6\text{H}_5$ , respectively. The reaction of  $\text{Ni}(\text{CO})_2(\text{P}(\text{R})_3)_2$  with  $\text{C}_6\text{H}_5\text{COCl}$  in the presence of  $\text{C}_6\text{H}_5\text{MgCl}$  yields  $\text{Ni}(\text{CO})_2(\text{C}_6\text{H}_5\text{CO})_2$  and  $\text{Ni}(\text{CO})_2(\text{C}_6\text{H}_5\text{CO})\text{C}_6\text{H}_5$ . The reaction of  $\text{Ni}(\text{CO})_2(\text{P}(\text{R})_3)_2$  with  $\text{C}_6\text{H}_5\text{COCl}$  in the presence of  $\text{C}_6\text{H}_5\text{MgCl}$  yields  $\text{Ni}(\text{CO})_2(\text{C}_6\text{H}_5\text{CO})_2$  and  $\text{Ni}(\text{CO})_2(\text{C}_6\text{H}_5\text{CO})\text{C}_6\text{H}_5$ .

**Keywords:** nickel carbonyl complexes; acyl complexes;  $\text{C}_6\text{H}_5\text{MgCl}$ ;  $\text{C}_6\text{H}_5\text{COCl}$ ;  $\text{C}_6\text{H}_5\text{COBr}$ ;  $\text{Ni}(\text{CO})_2(\text{P}(\text{R})_3)_2$ .

**Introduction:** The reaction of nickel carbonyl complexes with acyl chlorides and acyl bromides in the presence of Grignard reagents is a well-known reaction. The reaction of  $\text{Ni}(\text{CO})_2(\text{P}(\text{R})_3)_2$  with  $\text{C}_6\text{H}_5\text{COCl}$  and  $\text{C}_6\text{H}_5\text{COBr}$  in the presence of  $\text{C}_6\text{H}_5\text{MgCl}$  yields  $\text{Ni}(\text{CO})_2(\text{C}_6\text{H}_5\text{CO})_2$  and  $\text{Ni}(\text{CO})_2(\text{C}_6\text{H}_5\text{CO})\text{C}_6\text{H}_5$ , respectively.

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