

Coordinating properties of some solvents in $\text{Cr}(\text{CO})_5\text{L}$ complexes

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The influence of the donor-acceptor properties of several solvents on the $\text{Cr}(\text{CO})_5$ group in the solid $[\text{Cr}(\text{CO})_5\text{-solvent}]$ complexes has been examined by spectroscopic methods. Relationships were found between the acceptor number of solvent with the σ acceptor ability (Graham σ parameter) and with the σ_{max} for the ligand field $1A_1 \rightarrow 1E$ transition, in the carbonyl chromium complexes. These relations are discussed in terms of the dative metal-ligand σ bonding. From these results, it is possible to demonstrate the σ contribution in the acceptor number. © 1988 Pergamon Press plc.