

ON TRIFLUOROMETHYL TRANSITION ELEMENT COMPOUNDS:
PREPARATIONS, PROPERTIES AND MECHANISTIC INVESTIGATIONS

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Continuing our investigations on polar trifluoromethylation reactions we succeeded in preparing some trifluoromethyl chromium, molybdenum, tungsten, and manganese compounds by reacting the complex metal halides with $\text{Cd}(\text{CF}_3)_2$ complexes. The special conditions of these reactions as well as the n.m.r. spectra and some chemical properties of the partially new compounds will be discussed.

We developed a mechanism, which enables us to predict the optimal conditions of the polar trifluoromethylation reactions. A successful preparation depends on the basicity of the system, the dissociation equilibria of the starting materials, and the thermal stability of the postulated intermediates.