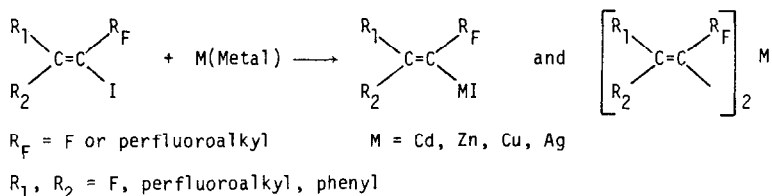


PREPARATION, STABILITY AND REACTIVITY OF FLUORINATED VINYL ORGANOMETALLIC COMPOUNDS

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In contrast to the low stability of the fluorinated vinylic lithium or magnesium reagents, the analogous vinylic cadmium, zinc, copper, and silver reagents have been found to exhibit excellent stability. These organometallic substrates are readily prepared from the corresponding vinylic iodides or via methathesis reaction. Stereochemical integrity is preserved in all organometallic-forming reactions as well as in all



subsequent chemical transformations of these reagents. In some cases ($M = \text{Cd}$), the bis-reagent can be isolated as a stable solid.

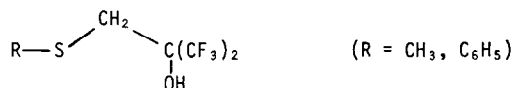
A variety of chain-extension and/or functionalization reactions of these stable organometallic compounds will be presented and discussed.

NMR AND SYNTHETIC STUDIES ON SOME FLUORINATED, SULFUR-CONTAINING, COMPLEXES OF Pd^{2+} , Pt^{2+} AND Rh^{3+}

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Starting with hexafluoroacetone and alkyl- or aryl-sulfides, we have synthesised new molecules of the type:



The enhanced acidity of the -OH group enables these molecules to ionize and coordinate to metals through oxygen and sulfur as bidentate, uninegative, ligands $[\text{L}^- = \text{RSCH}_2\text{C}(\text{CF}_3)_2\text{O}^-]$, and we have isolated complexes of the types ML_2 and $[(\text{Ph}_3\text{P})_2\text{ML}]^+$ ($M = \text{Pt}^{2+}, \text{Pd}^{2+}$) and RhL_3 .

On the basis of ^{19}F , ^1H and ^{31}P NMR spectra, several of the above complexes show isomerism in solution, which we attribute to the pyramidal geometry at coordinated sulfur. Variable-temperature NMR studies have been performed to investigate the dependence of the barrier to inversion on ligand structure and the identity of the metal.