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SYNTHESIS AND CRYSTAL STRUCTURE OF $[\text{CODRh}(\text{SC}_6\text{F}_5)]_2$

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The metathetical reaction of $\text{Pb}(\text{SC}_6\text{F}_5)_2$ with the halogen bridged compounds $[\text{L RhCl}]_2$ where L are chelating dienes, afforded the Chalcogen bridged analogs. Subsequent reactions with a variety of ligands including phosphines, arsines, sulfides and selenides, have shown important differences between sulphur and halogen bridged complexes, attributable to the fluorinated moiety. Some of these reactions will be discussed and the crystal structure of $[\text{COD Rh}(\text{SC}_6\text{F}_5)]_2$ will be described.

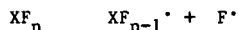
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FLUORINATION WITH VOLATILE INORGANIC FLUORIDES IN GLOW DISCHARGE

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While solid inorganic fluorides have been used widely for fluorination through halogen exchange reactions, with the exception of halogenfluorides volatile ones have found limited application for the introduction of fluorine into organic molecules. Glow discharge can fission any bond in a gaseous molecule, therefore the formation of fluorine radicals is expected when volatile fluorides are exposed to discharges:



In general, the equation is reversible in the absence of a receptor for the fluorine radical. We have found that in the presence of an organic polymeric surface (e.g. polyethylene, polypropylene etc) fluorination occurred. In a radiofrequency discharge, fluorination was detected with such fluorides as BF_3 , NF_3 and SiF_4 . Analysis by x-ray photoelectron spectroscopy has shown the presence of CF_2 and CF groups, but no boron nitrogen or silicon was detected. The fluorinated layer was practically resistant to extraction. On the other hand, when CF_4 was used as a fluorinating agent considerable amount of fluorine was detected on the surface which also included CF_3 groups, indicating that both radicals of the dissociation might have reacted with the surface. In addition, some of the fluorinated layers were not extraction resistant. This would point toward possible polymerization in vapor phase followed with deposition to the surface without any chemical bonding. The critical surface tension was approaching the value of polytetrafluoroethylene.