

POLAR TRIFLUOROMETHYLATION REACTIONS. PREPARATION OF TRIFLUOROMETHYL DERIVATIVES OF GALLIUM, INDIUM AND THALLIUM

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Trifluoromethyl derivatives of gallium, indium and thallium can be prepared reacting the corresponding chlorides with bis(trifluoromethyl)cadmium complexes.

Bis(trifluoromethyl)galliumchloride and tris(trifluoromethyl)thallium complexes can be isolated as white solids. The ^{19}F -NMR data, especially the dependence of the $^2J(^{203/205}\text{Tl}-^{19}\text{F})$ coupling constants on the number of CF_3 -groups bound to thallium, are discussed. Perfluoroalkylthallium derivatives are described.

By-products formed during those reactions have been isolated and fully characterized (e.g. $(\text{C}_6\text{H}_5)_3\text{PCF}_2\text{H}^+$, $\text{HCF}_2\text{O}(\text{CH}_2)_4\text{Cl}$). Mechanistic models have been developed.