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CHAIN-EXTENSION REACTIONS OF F-ALKYL COPPER REAGENTS
VIA INSERTIONS OF DIFLUOROCARBENE

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In a previous work [1], a gaussian distribution of perfluorinated oligomers $\text{CF}_3(\text{CF}_2)_n\text{Cu}$ with $n=1-13$ has been obtained, starting from CF_2Br_2 and an excess of copper powder in DMF, at a temperature above 65°C .

By using zinc activation upon CF_2Br_2 in DMF, in the presence of a pre-formed $\text{C}_6\text{F}_{13}\text{Cu}$, chain-extension reactions occur via insertions of $:\text{CF}_2$ into the carbon-copper bond, but we also obtain shorter chains than the starting copper reagent.

On the other hand, with lead activation upon CF_2Br_2 in CH_2Cl_2 , in the presence of $\text{N}(\text{C}_4\text{H}_9)_4\text{Br}$, these chain-extension reactions occur, but in this case, we do not observe the formation of shorter chains than the starting substrate.

1 D. J. Burton, Actualité chimique, Mai 1987, p 145.