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SYNTHESIS OF CHLOROFLUORINATED TELECHELIC OLIGOMERS BY BISTELOMERIZATION OF ALLYL ACETATE WITH HALOGENATED TELOGENS

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First, the telomerization of tetrafluoroethylene (TFE) and chlorotrifluoroethylene (CTFE) with carbon tetrachloride and bromotrichloromethane were performed by using a redox initiation [1,2]:

$$F_2C{=}CFX + Cl_3C\text{-}Y \longrightarrow Cl_3C\text{-}(CF_2CFX)_n\text{-}Y \quad \underline{1,n}$$

with (X,Y) = (F,Cl) 1a,n (Cl,Cl) 1b,n or (Cl,Br) 1c,n.

Telomers 1a,n and 1b,n can be changed into oligomers with trichloromethyl group at both ends of the chain :

$$\underline{1b,n} \xrightarrow{AlCl_3/CCl_4} Cl_3C\text{-}(CF_2CFCl)_{n-1}\text{-}CF_2CCl_3 \quad \underline{2b,n}.$$

Then the bistelomerization of allyl acetate with the above telogens 2b,1 and 2b,2 :

$$\underline{2b,n} + H_2C{=}CH\text{-}CH_2OCOCH_3 \longrightarrow \text{monoadduct} + \text{diadduct}$$

has been studied [3]. 3 4

We showed that copper salts allowed us to obtain 100% telechelic whereas the iron salts and $RuCl_2(PPh_3)_3$ [4] led to a 3/4 blend and we explain such results.

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