REACTIONS OF TETRAKIS(DIMETHYLAMINO)ETHYLENE WITH VARIOUS PERHALOGENATED METHANES

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Reactions of tetrakis(dimethylamino)ethylene (I) with CF_3I and CF_2Br_2 in the presence of different reactants have been investigated according to the reaction scheme below. While the reagent combination (I)/ CF_3I acts as a trifluoromethylating agent [1], N-trifluoromethylation of secondary amines has been observed with the combination (I)/ CF_2Br_2/KF [2]. Under similar reaction conditions trifluoromethylstannanes R_3SnCF_3 have been obtained.

$$\begin{array}{c} \text{Me}_{3}\text{SiCF}_{3} \\ & \uparrow \quad \text{CF}_{3}\text{I/Me}_{3}\text{SiCI} \\ \text{CF}_{2}\text{Br}_{2}/\text{KF/HNR}_{2} & \xrightarrow{\text{Me}_{2}\text{N}} \text{C=C} \\ \text{R}_{2}\text{NCF}_{3} & \xrightarrow{\text{Me}_{2}\text{N}} \text{C=C} \\ & \xrightarrow{\text{N Me}_{2}} & \xrightarrow{\text{N Me}_{2}} & \xrightarrow{\text{CF}_{2}\text{Br}_{2}/\text{KF/R}_{3}\text{SnCI}} \\ \text{R}_{3}\text{SnCF}_{3} & \xrightarrow{\text{N Me}_{2}\text{N Me}_{2}} & \xrightarrow{\text{CF}_{2}\text{Br}_{2}/\text{KF/R}_{3}\text{SnCI}} \end{array}$$

The mechanism of the reactions is discussed.

- 1 G. Pawelke, J. Fluorine Chem., 42 (1989) 429.
- 2 G. Pawelke, J. Fluorine Chem., in Press.