FLUORINATED METHYLSILICON POLYMERS

Ingo Ruppert

Anorganisch-Chemisches Institut der Universität Bonn, Gerhard-Domagk-Str. 1, 5300 Bonn 1 (F.R.G.)

We have succeeded in the synthesis of the two types of silicon polymers $\underline{\underline{A}}$ and $\underline{\underline{B}}$, which are highly loaded with fluorine at the backbone:

a) Si-perfluorated Methylpolysiloxanes by Selective Direct Fluorination.

Elemental fluorine replaces gradually the hydrogenes bound to silicon in hydromethyl-polysiloxanes thus leading to oligomeres of type \underline{A} .

b) ${\rm CF_3-substituted}$ Methylpolysiloxanes by Polycondensation of Chlorinated ${\rm CF_3-silanes}$.

The building blocks for the polymer type \underline{B} , e.g. $\underline{1}$ and $\underline{2}$, were generated by our method of <u>nucleophilic trifluoromethy</u>-lation (s. lecture B-15). Hydrolytic polycondensation of these chain units and endgroups gives \underline{B} as shown in the scheme.