



**KINETICS AND RHEOLOGY OF RING OPENING POLYMERISATION OF CYCLIC SILOXANE
MONOMERS INITIATED BY PHOSPHAZENE “SUPER” BASES**

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Phosphazene “super” bases are efficient catalysts to prepare polysiloxanes from cyclic monomers like decamethylcyclopentasiloxane (D5). Between 90°C and 120°C, polymers are formed with an equilibrium concentration of remaining monomers about 5%. To monitor this reaction, we used the space between plates of a rheometer as a chemical reactor. Thus, the variation of the extension of the chemical reaction coupled with the variation of the viscoelastic properties of the samples were recorded during the polymerization. The rate of polymerization were determined in the presence of different phosphazene bases allowing the ranking of the different catalyst efficiencies as a function of there basicity. For all the sample, a unique master curve of the variation of the viscosity of the reaction media vs. polymer concentration was obtained, allowing the calculation of a mathematical model wich can be used to foresee the variation of the viscosity during the reaction, this last data being used in extrusive conditions.