P-9

CHELATED I(V) ALCOHOLATE FLUORIDES

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The behavior of IF_5 towards nucleophilic exchange of fluoride against mono- and polyfunctional alcoholates in aprotic media was investigated using silylated alcohols as educts.

In a series of homologous bifunctional alcoholates $^-O(CH_2)_nO^-$ ($n = 2,3,4,5,6,12$) systems with short CH_2-chains ($n < 4$) form short lived species $IF_4[O(CH_2)_nO]X$ ($X = SiMe_3$, IF_4) which rearrange to mononuclear chelates $IF_3[O(CH_2)_nO]$ of high stability. Dialcoholates with long CH_2-chains ($n > 4$) behave as bridging ligands forming multinuclear compounds $IF_4[O(CH_2)_nO]IF_4$ and $\{IF_3[O(CH_2)_nO]\}_m$ ($m \geq 2$).

In a series of α,ß-ethandiolates with increasing number of CH_3-groups in α- and ß-positions short lived intermediates and stable chelates $IF_3[OC_2H_{4-n}(CH_3)_nO]$ and $IF[OC_2H_{4-n}(CH_3)_nO]_2$ ($n = 0\text{-}4$) are observed and characterized.

Time and temperature dependence of ^{19}F-NMR-spectra in relation to degree of methylation, arrangement and stereo-chemistry are discussed. Reactions of IF_5 with a geminal dialcoholate $CCl_3CH(O^-)_2$ and a trifunctional alcoholate $CH_3C(CH_2O^-)_3$ are reported.