

FLUORINATION REACTIONS OF UF₆ *

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Uranium hexafluoride is known to be an oxidative fluorinating agent, frequently breaking C-C bonds and oxidizing many elements to a higher oxidation state. This work will compare the behavior of UF₆ to that of two other fluorinating agents, WF₆ and SF₄, which are for the most part non-oxidative.

The reactions of UF₆ with a number of quite simple organic compounds have been studied; alcohols, aldehydes, ketones, acids, acid halides, ethers, olefins, and alkanes are included. The reactions of WF₆ and SF₄ with these compounds were investigated also when no data existed in the literature. The primary tool was ¹⁹F NMR, assisted by ¹H NMR, infrared, powder diffraction, thermogravimetry and elemental analysis when needed.

The differences in behavior of the three agents with respect to the same compounds will be emphasized.

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