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REACTIONS OF XENON DIFLUORIDE AND XENON HEXAFLUORIDE WITH SOME HYDRAZINIUM AND AMMONIUM FLUOROURANATES

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The reactions of some hydrazinium fluorouranates and some ammonium fluorouranates with excess xenon difluoride or xenon hexafluoride were studied.

The reactions between hydrazinium fluorouranates and xenon difluoride proceed via ammonium fluorouranates to binary metal fluorides, with the uranium in the higher oxidation state than in the starting materials. In contrast, reactions between ammonium fluorouranates and xenon difluoride proceed with oxidation of only the metal. In this system we succeeded in synthesizing a new uranium compound, $(NH_4)_4UF_{10}$. Analysis of its vibrational spectra indicates a coordination higher than 8, hitherto unobserved for monomeric fluorouranates.

The reactions with xenon hexafluoride are more complex, giving in the case of hydrazinium fluorouranates either binary metal fluorides or XeF_5^+ complexes, and in the case of ammonium fluorouranates, the end products contain XeF_5^+ and NH_4^+ cations.

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