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VARIOUS ASPECTS OF THE REACTIVITY OF THE XENON(VI) OXYFLUORIDE: $XeOF_4$

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In the liquid state $XeOF_4$ exhibits an amphoteric behaviour : its ability to form complexes with the strong Lewis base CsF and the strong Lewis acid SbF_5 has been established earlier. Its relative stability toward reduction is discussed.

In the gas phase, the sensitization of its dissociation giving Xenon tetrafluoride and oxygen is performed using SF_6 excited by a pulsed CO_2 laser. This experiment shows an efficiency 60 times greater than the multiphoton dissociation for equal energies. These last results have been explained by a theory of the vibrational intermolecular transfer for molecules in their quasi continuum[::::].

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I-16

PERFLUORO AMMONIUM AND ALKALI METAL SALTS OF THE HEPTAFLUORO XENON(VI) AND OCTAFLUORO XENON(VI) ANIONS

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The NF_4XeF_7 salt was prepared from XeF_6 and NF_4HF_2, and was converted to $(NF_4)_2XeF_8$ by selective laser photolysis. These new salts and the known $CsXeF_7$ and Cs_2XeF_8 were characterized, and their vibrational spectra are reported. Evidence is presented for the existence of a stable $NaXeF_7$ salt. The presence of different phases in solid XeF_6 was confirmed by Raman spectroscopy.