

THE MICROWAVE SPECTRUM AND STRUCTURE OF HNO₃-HCl

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The microwave spectrum of HNO₃-HCl has been obtained via pulsed nozzle Fourier transform microwave spectroscopy. The spectrum is consistent with a planar or near-planar structure in which the HNO₃ hydrogen bonds to the chlorine and the O-H vector is nearly perpendicular to the H-Cl bond. Preliminary analysis indicates a hydrogen bond length of about 2.3 Å, which is similar to that in HCl-HF. The structure is compared with those of HNO₃-NH₃ and HNO₃-H₂O, both of which have been previously studied in our laboratory.