

CHLORINE NUCLEAR QUADRUPOLE HYPERFINE STRUCTURE IN THE VINYL CHLORIDE–HYDROGEN CHLORIDE COMPLEX

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The microwave spectrum of the vinyl chloride–hydrogen chloride complex, presented at last year's symposium, is greatly complicated by the presence of two chlorine nuclei as well as an observed, but not fully explained tunneling motion. Indeed, although it was possible at that time to demonstrate conclusively that the complex is nonplanar, the chlorine nuclear quadrupole hyperfine splitting in the rotational spectrum resisted analysis. With higher resolution, Balle-Flygare Fourier transform microwave spectra, the hyperfine structure has been more fully resolved, but appears to be perturbed for some rotational transitions. It appears that knowledge of the quadrupole coupling constants will provide essential information regarding the structure of the complex, specifically the location of the hydrogen atom in HCl. Our progress towards obtaining values for these constants will be presented.