

THE MICROWAVE SPECTRA OF THE LINEAR OC HCCCN, OC DCCCN, AND THE T-SHAPED HCCCN CO₂ COMPLEXES

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The rotational spectra of OC HCCCN, OC DCCCN, and HCCCN CO₂ have been recorded using pulsed-jet Fourier transform microwave spectroscopy. Accurate molecular constants have been obtained and agree with the results from IR spectroscopy.^{a, b} The OC HCCCN is hydrogen-bonded in a linear configuration, and the HCCCN CO₂ is T-shaped with the CO₂ molecule at the nitrogen end of the cyanoacetylene. The ¹³C, the ¹⁵N, and the ¹⁸O isotopologues for both the OC HCCCN and OC DCCCN complexes have been observed in natural abundance. The fully substituted molecular structure of the OC HCCCN complex has been determined. The results will be compared with those of the corresponding complexes of HCN.

^aX. Yang, R. Z. Pearson, and G. Scoles, *Chem. Phys. Lett.* **204**, 145-151 (1993)

^bX. Yang, R. Z. Pearson, and G. Scoles, *J. Mol. Spectrosc.* **180**, 1-6 (1996)