

## MICROSOLVATION OF A PARTIALLY FORMED BOND: ROTATIONAL SPECTROSCOPY OF HCN-HCN-BF<sub>3</sub>

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The complex HCN-HCN-BF<sub>3</sub> and several of its isotopic derivatives have been observed by Fourier transform microwave spectroscopy. The system has the expected C<sub>3v</sub> geometry with the outer nitrogen of a linear (HCN)<sub>2</sub> bound to the BF<sub>3</sub>. This species represents the first step in the microsolvation of HCN-BF<sub>3</sub>, a partially bonded complex whose structure has been previously determined from rotational spectroscopy<sup>a</sup>. The hypersensitivity to a local environment of complexes with partially formed dative linkages has been well established, and thus large changes in the structure and bonding within the HCN-BF<sub>3</sub> unit are expected for this complex. Progress in the structure analysis will be reported, and the results compared with those for both HCN-BF<sub>3</sub> and HCN-HCN-SO<sub>3</sub>.

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<sup>a</sup>S. W. Reeve, W. A. Burns, F. J. Lovas, R. D. Suenram, and K. R. Leopold *J. Phys. Chem.* **97**, 10630 1993.