

MICROSOLVATION COMPLEXES OF ETHYL CARBAMATE STUDIED BY MICROWAVE SPECTROSCOPY.

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The rotational spectra of ethyl carbamate-(H₂O)_n (n = 1, 2, 3) generated in a supersonic expansion have been studied using both a chirped-pulse and a molecular beam Fourier transform microwave spectrometer. Ethyl carbamate presents in the gas phase an equilibrium between two structures close in energy with a low interconversion barrier.^{a,b} The observation of these structures and their complexes strongly depends on the carrier gas used due to collisional relaxation in the supersonic jet. Using argon, only the most stable form and its water complexes are observed. Using neon, both forms and their corresponding complexes are observed. The structures of the complexes have been characterized and show water closing sequential cycles with the H-N-C=O amide group. They show structural and dynamical features similar to those observed, for example, in formamide-(H₂O)_n clusters.

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