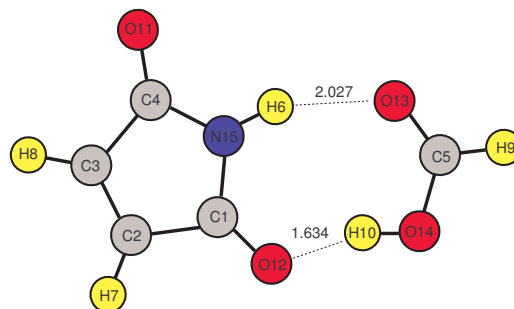


# MICROWAVE MEASUREMENTS OF MALEIMIDE AND ITS DOUBLY HYDROGEN BONDED DIMER WITH FORMIC ACID\*

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The microwave spectra were measured for the maleimide monomer and the maleimide-formic acid doubly hydrogen bonded dimer using a pulsed-beam Fourier transform microwave spectrometer. Many previously studied doubly hydrogen bonded dimers are formed between oxygen containing species, so it is important to also characterize and study other dimers containing nitrogen, as hydrogen bonding interactions with nitrogen are found in biological systems such as in DNA. The transition state of the dimer does not exhibit  $C_{2V}$  symmetry, so the tunneling motion was not expected to be observed based on the symmetry, but it would be very important to also observe the tunneling process for an asymmetric dimer. Single-line b-type transitions were observed, so the tunneling motion was not observed in our microwave spectra. The hydrogen bond lengths were determined using a nonlinear least squares fitting program.



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