MICROWAVE SPECTROSCOPY AND MOLECULAR CONFORMATION OF PROLINAMIDE

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Microwave spectra for three isotopomers of the amino acid derivative prolinamide were observed using a Fourier-transform microwave spectrometer. Twelve *a*- and *b*-type transitions were recorded for the most abundant species and each of two ^{15}N substituted species. The highly conjested nuclear quadrupole hyperfine patterns were unresolved for two of the isotopic species, and measurments of the center frequencies had uncertainties up to 150 kHz. Rotational constants for the most abundant isotope were determined as A = 3640.312(118) MHz, B = 1655.737(26) MHz, and C = 1386.514(20) MHz. Moments of inertia were calculated for eight low-energy conformers identified by semi-empirical and ab initio calculations. These data were compared with experimental moments of inertia and indicate that the observed structure is best described as a half-chair with C^{γ} above and C^{β} below the average pyrrolidine ring plane.