

H₂- AND SELF- BROADENED AMMONIA IN THE FAR-INFRARED

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Self- and hydrogen-broadened line widths of NH₃ at room temperature have been measured between 80 and 210 cm⁻¹ using the JPL Bruker Fourier transform spectrometer. Laboratory spectra of pure and hydrogen-broadened NH₃ have been recorded at 0.006 cm⁻¹ resolution using a helium-cooled bolometer and optical paths of 1 and 26 cm. The pure sample spectra have been used to investigate the database (111'1'RAN and GISA) prediction of the region. While the calculated positions and intensities of the rotational band are in good agreement with observed, the hot band intensities are different by nearly a factor of 2.

The line widths of the rotational R branch from R₃ to R₉ and some hot band transitions of ν_2 - ν_2 have been measured with precision of $\pm 2\%$ or better. The self-broadening of the hot band transitions is noticeably smaller compared to that of the rotational lines. The self- and H₂-broadened widths have been compared to other measurements.

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