QUANTITATIVE MEASUREMENT OF INTEGRATED BAND INTENSITIES OF ISOPRENE AND FORMALDEHYDE

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The OH-initiated oxidation of isoprene, which is one of the primary volatile organic compounds produced by vegetation, is a major source of atmospheric formaldehyde and other oxygenated organics. Both molecules are also known products of biomass burning. Absorption coefficients and integrated band intensities for isoprene and formaldehyde are reported in the 600 - 6500 cm^{-1} region. The pressure broadened (1 atmosphere N_2) spectra were recorded at 278, 298 and 323 K in a 19.96 cm path length cell at 0.112 cm^{-1} resolution, using a Bruker 66V FTIR. Composite spectra are composed of a minimum of seven pressures at each temperature for both molecules. These data are part of the PNNL Spectral Database,[a] which contains quantitative spectra of over 600 molecules. These quantitative spectra facilitate atmospheric monitoring for both remote and in situ sensing and such applications will be discussed.

[a]Timothy J. Johnson, Luisa T. M. Profeta, Robert L. Sams, David W. T. Griffith, Robert L. Yokelson *Vibrational Spectroscopy* **53**(1);97-102 (2010).