INFRARED SPECTROSCOPY OF HOCl EMBEDDED IN HELIUM NANODROPLETS

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The infrared depletion spectrum of hypochlorous acid (HOCl) embedded in superfluid helium nanodroplets has been measured in the region near 2.8 μm. The spectrum consists of baseline resolved *a*-type lines and a broad convoluted *b*-type feature. The *a*-type lines are asymmetrically skewed in the direction of the band origin, and an analysis of their line shapes based on the chirped damped oscillator function introduced by van Staveren and Apkarian[a] yields a response time of the helium solvent of 1 ns. The *b*-type lines are much broader due to the greater number of droplet states available for relaxation of the excited rotational states.

[a] M. N. van Staveren, and V. A. Apkarian *J. Chem. Phys.*, **133**, 054506 (2010).