EFFECT OF SUBSTITUENTS IN ALCOHOL-AMINE COMPLEXES

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A series of alcohol-amine complexes have been investigated to gain physical insight into the effect on the hydrogen bond strength as different substituents are attached. The series of complexes investigated are shown in the figure, where R_1 = CH_3, CH_3CH_2 or CF_3CH_2 and R_2 = H or CH_3. To estimate the hydrogen bond strength, redshifts of the OH-stretching transition frequency upon complexation were measured using gas phase Fourier Transform InfraRed (FTIR) spectroscopy. Equilibrium constants for the formation of the complexes were also determined, exploiting a combination of a calculated oscillator strength and the measured integrated absorbance of the fundamental OH-stretching and second overtone NH-stretching transitions.