PHOTOELECTRON IMAGING OF 1,2,3-TRIAZOLIDE ANION

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We report the ultraviolet photoelectron spectra of the 1,2,3-triazolide anion, $C_2H_2N_3{}^-$, obtained using a high resolution, pulsed photoelectron imaging spectrometer. The triazolide anion is formed in a pulsed supersonic expansion by hydroxide deprotonation of 1,2,3 triazole. The desired anion is selected by appropriate gating in a time of flight mass spectrometer, and photodetached with ultraviolet laser radiation tunable between 210 and 320 nm. The photoelectron image is obtained with an electron imaging spectrometer oriented perpendicular to the 2.3 keV ion beam, and operated in a velocity focusing mode. The spectrometer has a photoelectron energy resolution of 2.5 percent of the electron kinetic energy. The electron affinity, N-H bond dissociation energy, and low lying excited states of the triazolly radical will be discussed and compared with corresponding information for several other members of the azole series.
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