LOW TEMPERATURE MATRIX ISOLATION STUDIES OF BORON TRIAZIDE

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Boron triazide has been shown to form BN films upon photolysis at room temperature.(1) The photolysis mechanism is not understood, and low temperature matrix isolation experiments are planned that will probe the photolysis process. As a first step in this study, a boron triazide generator was attached to the inlet port of the cryostat in our laboratory. In the generator, stoichiometric flows of HN_3 and BCl_3, both diluted in argon, are admitted to a 5 liter mixing bulb. The effluent from the mixing bulb is deposited on the cold KCl window in the cryostat. Infrared spectra of the matrices formed in this manner show the formation of B-N_3 containing species, and these will be presented and discussed. The results of ab initio calculations on $B(N_3)_xCl_y$ will be compared to these data.

1. R.L. Mulinax, G.S. Okin, R.D. Coombe; J. Phys. Chem. 99, 1995, 6295.