

HIGH RESOLUTION INFRARED EMISSION SPECTROSCOPY OF DICHLOROBORANE BHCl_2

TSUYOSHI HIRAO, PINA COLARUSSO and PETER F. BERNATH, *Department of Chemistry, University of Waterloo, Waterloo, Ontario N2L 3G1.*

The absorption spectrum of dichloroborane BHCl_2 was accidentally recorded during Fourier transform emission measurements of HBO. Gaseous dichloroborane was generated by the reaction of amorphous boron powder with CaCl_2 at 1400 C. The bands centred near 2617, 1089 and 892 cm^{-1} were assigned as the ν_1 (B-H stretch), the ν_5 (HBCl bend), and the ν_6 (BCl_2 antisymmetric stretch) fundamental modes, respectively. Molecular constants were determined from rotational analyses of these bands. This is a first analysis of the rotational structure of the ν_5 and ν_6 modes.