

FOURIER TRANSFORM EMISSION SPECTROSCOPY OF THE $B' \ ^2\Sigma^+ - X \ ^2\Sigma^+$ TRANSITIONS OF MgH AND MgD

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Emission spectra of MgH and MgD have been investigated in the $8000 - 22000 \text{ cm}^{-1}$ region using a high resolution Fourier transform spectrometer. These molecules were generated in a furnace-discharge source, at about 900 K and 333 mA discharge current with magnesium and a mixture of Ar and H_2 or D_2 gases. The recorded spectra contain not only the well-known $A \ ^2\Pi - X \ ^2\Sigma^+$ transitions, but also the $B' \ ^2\Sigma^+ - X \ ^2\Sigma^+$ transitions of MgH and MgD . We obtained data for $v'' = 2$ to 9 for the ground state of MgH and $v'' = 3$ to 13 for MgD . Analyses of the data is in progress, and will lead to improved potential energy curves for the $X \ ^2\Sigma^+$ states of MgH and MgD . These results will be presented at the time of symposium.