

Abstract Submitted  
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**Magnetic Properties of Dihydrate and Monohydrate Forms of Nickel Dibromide**<sup>1</sup> G.C. DEFOTIS, C.L. DESANTO, C.M. DAVIS, J.M. POTHEN, A.S. HAMPTON, College of William and Mary — As with transition metal bromides generally, especially hydrates, the title materials are either little studied previously or not at all (monohydrate). Curie-Weiss analysis of paramagnetic region susceptibilities yields Weiss theta values of 8.0 and 27.3 K for dihydrate and monohydrate respectively, indicating predominant ferromagnetic interactions but less so in the dihydrate. Peculiar behavior appears in the susceptibility of the monohydrate in the 40-100 K range. A large zero field splitting of the triplet ground state emerges from fits to dihydrate data especially. Susceptibility maxima occur just below and, unexpectedly, just above 6.0 K for dihydrate and monohydrate respectively. Fits to the data suggest more lower dimensional magnetic character in the monohydrate. While magnetization isotherms in the two systems are without hysteresis, a remarkable contrast in their temperature evolution distinguishes the two materials.

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