

Abstract Submitted
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Magnetic Behavior in Dihydrate and Monohydrate Forms of Manganese Dibromide¹ G.C. DEFOTIS, A.S. HAMPTON, J.M. POTHEN, College of William and Mary — Transition metal bromides, especially hydrates, are much less examined than chlorides, and the title materials are believed to be previously unstudied. Curie-Weiss analysis of paramagnetic region susceptibilities yields Weiss theta values of -13.1 and -3.9 K for dihydrate and monohydrate respectively. A susceptibility maximum appears at 6.34 and 3.20 K in the same order, with the maximum broader in the monohydrate. Ordering temperatures are suggested by susceptibility anomalies at 5.91 and 2.63 K in the same order. The ratio $T(\text{ordering})/T(\text{maximum})$ is 0.93 and 0.82 for dihydrate and monohydrate respectively. These results are consistent in suggesting three-dimensional magnetic character in the dihydrate but lower dimensional in the monohydrate. A similar relation was found previously for corresponding chloride systems, with which further comparison can be made. The results can also be considered in the broader context of other metal dihalide dihydrate and monohydrate pairs of materials.

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G.C. DeFotis

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