

Magnetic Properties of the $S=2$ Heisenberg Antiferromagnetic Chain Compound $\text{MnCl}_3(\text{bpy})$

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We report the experimental results of magnetic susceptibilities at temperatures between 2 and 300 K, and high-field magnetization in magnetic fields of up to 52 T on a powder sample of $\text{MnCl}_3(\text{bpy})$ (bpy=2, 2'-bipyridine).¹ This compound is one of the rare examples of the spin 2 quasi-one-dimensional Heisenberg antiferromagnet, and the magnetic properties on tiny single crystal samples were reported previously.² The temperature dependence of magnetic susceptibility and the magnetization curve after subtracting the contribution of magnetic impurity are well fitted to those calculated by a quantum Monte Carlo method (up to 96 and 97 spins with periodic and open boundary conditions, respectively) with $J/k_B=31.2$ K and $g=2.02$ which are comparable to reported values ($J/k_B=34.8\pm 1.6$ K and $g=2.04\pm 0.04$).

¹S.P. Perlepes, A.G. Blackman, J.C. Huffman and G. Christou, *Inorg. Chem.* **30**, 1665 (1991).

²G.E. Granroth, M.W. Meisel, M. Chaparala, Th. Jolicoeur, B. H. Ward and D.R. Talham, *Phys. Rev. Lett.* **77**, 1616 (1996).