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Thermodynamic Properties of Pr₃RuO₇¹ M. FREEMAT, X.N. LIN, V. DURAIRAJ, S. CHIKARA, G. CAO, J.W. BRILL, University of Kentucky — We have measured the thermal and magnetic properties of single crystals of Pr₃RuO₇. The magnetic measurements indicate an antiferromagnetic transition with spins aligned along the RuO chains (i.e. c-axis) at $T_N = 54$ K at which there is a large step anomaly in the specific heat, $\Delta c \sim R$, but the estimated entropy change is small, $\Delta s \sim R/10$, suggesting only incomplete spin ordering in zero field. On the other hand, there is a metamagnetic transition at low temperature at $B_c \sim 3$ T with a large saturated moment of $\sim 5 \mu_B$. Surprisingly, there is a large linear contribution to the specific heat at low temperatures, $\gamma \sim 0.16$ J/mol•K² and large temperature independent contribution to the susceptibility, with a Wilson ratio $\chi_0/\gamma > 1$, suggesting that, despite its insulating behavior, there is a finite density of states of strongly correlated electrons at the Fermi surface.

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