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Thermodynamic and transport anisotropic properties of RVSb3 crystals[1] ATHENA S. SEFAT, SERGEY L. BUD'KO, PAUL C. CANFIELD, Ames Laboratory, Department of Physics and Astronomy, Iowa State University, Ames, Iowa, 50011 — The RVSb3 series (R= La, Nd, Sm, Gd - Dy) offers the possibility of studying the magnetic ordering in materials with a single, crystallographically unique, rare-earth site. The anisotropic magnetization M(H, T), resistivity, and heat capacity C(T) results, on flux-grown crystals, will be presented. All of the compounds are metallic, and all, with the exceptions of non-magnetic LaVSb3 and ferromagnetic CeVSb3, show features typical of antiferromagnetic order below 10 K. For CeVSb3, the easy axis of magnetization is parallel to c in the ordered state, whereas for the antiferromagnetic RVSb3 members of Pr, Nd, Tb, and Dy, the crystalline fields confine the spins close to the a-axis. Given that CeVSb3 is a rare example of a Ce based ferromagnet, we measured the pressure dependence of Tc up to 10 kbar and found it to increase at a rate of 0.14 K/kbar.

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