

In this work we report on physical properties of Nd₂RhIn₈ and Nd₂IrIn₈ rare-earth intermetallic compounds from the RmTnX_{2n+3m} compound family. The compounds crystallize in the P4/mmm space group. Both compounds are anti-ferromagnetic with Néel temperatures T_N of 10.8 K, 12.5 K respectively and their magnetization curves show characteristic step-like transitions at low temperatures. The measured M(T) and/or M(H) magnetization curves were used to determine magnetic phase diagrams for field along the c-axis. The specific heat of Nd₂IrIn₈ was analyzed at temperatures T < T_N with respect to the dimensionality of the magnetic excitations. In the T > T_N region the Schottky specific heat and susceptibility were compared to calculations based on the crystal field scheme in Nd₂IrIn₈ obtained by ab-initio methods.