

Heavy Fermion Behaviour in $\text{Ce}_2\text{Ni}_{1.88}\text{Cd}$

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Dedicated to Dr. Bernard Chevalier on the occasion of his 60th birthday

The intermetallic compound $\text{Ce}_2\text{Ni}_{1.88}\text{Cd}$ (tetragonal Mo_2FeB_2 -type structure) has been investigated by magnetization (down to 1.8 K), electrical resistivity (ρ) and heat capacity (down to 0.5 K) measurements as a function of temperature (T). On the basis of these data, it is concluded that this compound is a heavy-fermion with a Kondo temperature in the range 235 – 250 K. Fermi-liquid behaviour expected for Kondo lattices is obeyed for the low temperature ρ data, but the ratio of the coefficient of the T^2 term in the electrical resistivity to the square of the linear coefficient of the heat capacity is apparently low compared to the ‘universal ratio’ known for other cerium compounds, as though there is a breakdown of the Kadowaki-Woods relation in this compound. The value of this ratio falls in the range known for many intermediate-valent ytterbium compounds.

Key words: $\text{Ce}_2\text{Ni}_{1.88}\text{Cd}$, Heavy Fermion, Kadowaki-Woods Relation