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## Thermodynamic and transport properties of single crystal YbNi<sub>4</sub>Cd

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Title: Thermodynamic and transport properties of single crystal YbNi<sub>4</sub>Cd

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Single crystals of YbNi<sub>4</sub>Cd and LuNi<sub>4</sub>Cd were grown via solution growth techniques. We have studied the thermal, magnetic, and electrical properties of the intermetallic system YbNi<sub>4</sub>Cd and LuNi<sub>4</sub>Cd by means of specific heat, magnetization, and resistivity measurements. In zero field YbNi<sub>4</sub>Cd exhibits a long range magnetic order below ~1 K. The electrical resistivity and specific heat measurements show the magnetic as well as Kondo contributions. We will discuss the results in relation to the cubic compounds YbCu<sub>4</sub>X (X = Ag, Cd, In) which show a wide variety of physical properties. The compounds crystallize in a cubic MgCu<sub>4</sub>Sn-type crystal structure. YbCu<sub>4</sub>Ag and YbCu<sub>4</sub>Cd are a heavy-fermion compound with no magnetic ordering. YbCu<sub>4</sub>In has attracted the greatest interest due to the first-order valence transition below 42 K.

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