Specific heat some of the R_3Co compounds.

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9.7 cm

Specific heat measurements were performed in the temperature range from 2 to 300 K on the number of the R_3Co compounds. Using the value of the electronic specific heat coefficient γ=0.017 J/(mol K) and Debye temperature Θ_D=234 K for Y_3Co compound, the Debye temperatures, phonon and conduction electronic contributions as well as magnetic part of the specific heat were estimated for other R_3Co compounds. The magnetic part of the specific heat can be divided into two parts, one of which caused by entropy change due to magnetic ordering lower Neel temperature T_N and the other part is due to Schottky anomaly with broad maximum around 26-36 K depend on rare earth component of the compounds. Magnetic contribution to the entropy S_m was calculated using experimental data. The value of the magnetic entropy S_m does not reach theoretical one S_m^{max} at $T=T_N$. For Gd_3Co the expected value of the entropy is reached at about room temperature while behavior of the $S_m(T)$ for Er_3Co and Ho_3Co compounds is different from expected. The magnetic contributions to entropy caused by localized 4f and itinerant 3d electrons are discussed.

13.4 cm

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