Magnetic properties of $RCuIn$ ($R = Gd - Ho$) compounds

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9.7 cm

AC susceptibility and DC magnetization measurements were performed for the $RCuIn$ ($R = Gd - Ho$) series both in the paramagnetic and the ordred state. All compounds are antiferromagnets with the Néel temperatures equal 24 K for $R = Gd$, 28 K for $R = Tb$, 6 K for $R = Dy$ and 5.4 K for $R = Ho$. At 4.2 K the magnetization curves for $R = Gd$ and Tb are linear function of the external magnetic field while for $R = Dy$ and Ho have the paramagnetic character. Above the Néel temperature the reciprocal magnetic susceptibilities obey the Curie - Weiss law with the paramagnetic Curie temperatures equal +4 K for $R = Gd$, -27 K $R = Tb$, -10 K for $R = Dy$ and -8 K for $R = Ho$ and the effective magnetic moments near to the free R^{3+} ion values. The obtained results are compared with the data for the isostructural $RTIn$ ($R = Pd, Au$) compounds.

13.4 cm

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