MAGNETIC PROPERTIES OF THE RRhGe (R=Gd-Tm) COMPOUNDS

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The magnetic properties of the ternary intermetallics RRhGe (R=Gd-Tm) have been investigated by magnetic and neutron diffraction measurements. These compounds crystallize in a TiNiSi-type orthorhombic structure and are antiferromagnets with the Néel temperature 30.8 K for R=Gd, 23 K (Tb), 20 K (Dy), 4.6 K (Ho), 9.5 K (Er) and 6.2 K (Tm). The neutron diffraction data reveal that these compounds exhibit different magnetic structures: sine modulated for TbRhGe, collinear with the propagation vectors $k = (\frac{1}{2}, 0, \frac{1}{2})$ for HoRhGe and $k = (0, \frac{1}{2}, 0)$ for ErRhGe. For ErRhGe, with an increasing temperature a change to the incommesurate sine modulated structure below $T_t = 5$ K is observed. For these compounds the Néel temperatures not obeyed the de Gennes function.

9.7 cm

13.4 cm

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