

Thermal expansion on some REIn₃ (RE=La,Pr,Gd)

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Results of the linear thermal expansion coefficient α measurements are reported for PrIn₃, GdIn₃ and LuIn₃. Those systems belong to the large family of the REIn₃ (RE = Rare Earth) compounds which crystallize in the AuCu₃-type of crystal structure.

The measurements were carried out on monocrystalline samples in temperature range 5K ÷ 200K. Compounds under investigation differ to their magnetic properties. PrIn₃ is a typical example of the singlet ground-state paramagnet in which the interionic interactions may be neglected while the GdIn₃ is the crystal-field free antiferromagnet in which the RKKY interactions play essential role. Therefore, apart from the results for α , also magnetic contributions to α have been estimated and compared with those calculated from theoretical predictions. Results obtained for the nonmagnetic LaIn₃ stand here as a phonon reference.

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