

**HEAT CAPACITY OF THE MELT-SPUN CUBIC $RECu_5$
COMPOUNDS (RE - HEAVY RARE EARTHS)**

M. Reiffers^a, B. Idzikowski^b, S. Ilkovič^c, J. Šebek^d, E. Šantavá^d

^aInstitute of Experimental Physics, Watsonova 47, SK-043 53 Košice, Slovakia

^bInstitute of Molecular Physics, Polish Academy of Sciences, M.Smoluchowskiego 17,
PL 60-179 Poznań, Poland

^cFaculty of Sciences, University of Prešov, 17.novembra, SK-080 78 Prešov, Slovakia

^dInstitute of Physics, V Holešovičkách 2, CZ-18000 Praha, Czech Republic

Very few experimental data on physical properties and crystalline electric field (CEF) are available for the cubic intermetallic compounds of the $RECu_5$ (RE - heavy rare earths) series, because of the difficulty in obtaining single phase samples, due to the proximity of the congruently melting $RECu_5$ phase. Previously we have studied the electron-quasiparticle interaction (EQI) by point-contact spectroscopy. We have determined the crystalline electric field contributions to EQI. Therefore, we have performed a systematic study of the heat capacity, transport, and magnetic properties of this class of compounds. The polycrystalline samples have been prepared in ribbon shape by low temperature melt-spun and subsequent annealing. We have performed the heat capacity measurements by commercial device PPMS of QUANTUM DESIGN in the applied magnetic field up to 9 T and in the temperature range 0.4 - 300 K. We have observed the phase transition into the magnetic ordered states. First we observed the magnetic ordering in $TmCu_5$ at 1.2 K. We determine the magnetic contribution and entropy in all compounds.

9.7 cm

13.4 cm

Subject category :

6. Soft and Hard Magnetic Materials

Presentation mode :

oral

Corresponding author :

M. Reiffers

Address for correspondence :

Institute of Experimental Physics
Watsonova 47
SK-043 53 Košice
Slovakia

Email address :

reiffers@saske.sk