Lu-Er

Lu Er

VIII-5520

1872

1-x

X - 103851b Thermal and magnetic study of the crystal field energy levels in dilute rare-earth alloys. I. $Lu_{0.9035}Er_{0.0965}$. Taylor, W. A.; Gerstein, B. C.; Shickell, W. D.; Spedding, F. I. (Inst. At. Res., Iowa State Univ., Ames, Iowa). *J. Chem. Phys.* 1972, 56(6), 2722–30 (Eng). The heat capacity from 6 to 300°K and initial susceptibility from 1.3 to 145°K of an $Lu_{1-x}Er_x$ alloy with x = 0.0965 were measured. The susceptibility indicated magnetic transitions at 2.3 and 10.3°K. The magnetic contribution to the heat capacity exhibited an anomaly at ~10.3°K along with a Schottky anomaly which is attributed to the crystal-field levels of the Er in the alloy. To fit the high-temp. tail of the Schottky anomaly, the crystal-field levels must have a total splitting of ~70 cm^{-1} with the levels bunched toward higher energies.

Cp

Tlz

C.A. 1972. 76. 18

$Er_{0,75}Lu_{0,25}$ VII-5956 1973

8413j Neutron diffraction study of the magnetic structure of erbium-lutetium [$Er_{0.75}Lu_{0.25}$]. Habenschuss, M.; Stassis, C.; Sinha, S. K.; Spedding, F. H. (Ames Lab., Iowa State Univ., Ames, Iowa). *Phys. Lett. A* 1973, 45(4), 281–2 (Eng). In the neutron-diffraction measurements at 4.9–78°K on single-crystal $Er_{0.75}Lu_{0.25}$, a transition to the longitudinal spin-wave structure (J. W. Cable, et al., 1965) with the wave vector along the *c*-axis was obsd. at the Neel temp. (T_N = 68°K), and a transition to a slightly distorted antiferromagnetic conical spin configuration was obsd. at 40°K. No ferromagnetic transition was obsd.

(T Neel)

C.A. 1974. 80. N2