

Lu-Tm

$TmVO_4 + Lu^{3+}$

1975

(cp)

85: 100123r Effects of random strain fields on the specific heats of molecular field systems - dilute thulium vanadate. Gehring, G. A.; Swithenby, S. J.; Wells, M. R. (Clarendon Lab., Oxford, Engl.). *Proc. Int. Conf. Low Temp. Phys.*, 14th 1975, 3, 216-19 (Eng). Edited by Krusius, Matti; Vuorio, Matti. North-Holland: Amsterdam, Neth. The sp. heats were detd. of 3 concns. of  $Lu^{3+}$  ions in  $TmVO_4$  [13566-11-5] which shows anomalous behavior in the liq. He temp. range. The results are discussed in the light of mol. field theory.

C.A. 1976 85 N14

$Tm_x Li_{1-x} VO_4$  (Cp)

1976

$TmVO_4$   
(T+x)

1 84: 141575n Random strain fields on a molecular field system-dilute thulium vanadate. Gehring, G. A.; Swithenby, S. J.; Wells, M. R. (Dep. Theor. Phys., Oxford, Engl.). *Solid State Commun.* 1976, 18(1), 31-4 (Eng). The specific heats of  $Tm_{1-x}Li_xVO_4$  were measured for 4 values of x in the liq. He temp. range. Pure  $TmVO_4$  undergoes a cooperative distortion at  $T_D = 2.15^\circ K$ , but, as the concn. of  $Tm^{3+}$  ions is reduced,  $T_D$  falls rapidly. A modified mol. field theory is discussed which, through the inclusion of a term describing the random local distortions, successfully explains the forms of the specific heat curves.

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C.A. 1976 84 N20

$Tm_{1-x}Lu_xCu_2Si_2$  (DM-27085) 1987

(G)

/ 107: 248511j Magnetic properties and specific heat of thulium lutetium copper silicide ( $Tm_{1-x}Lu_xCu_2Si_2$ ). Kozłowski, A.; Maksymowicz, A.; Tarnawski, Z.; Lewicki, A.; Zukrowski, J.; Aniola-Jedrzejek, L. (Solid State Phys. Dep., Acad. Mining Metall., 30-059 Krakow, Pol.). *J. Magn. Magn. Mater.* 1987, 68(1), 95-101 (Eng). Tetragonal  $TmCu_2Si_2$  is the only magnetically ordered material of the  $RECu_2Si_2$  group for which crystal field parameters were detd. Quadrupole splitting was measured by means of Moessbauer spectroscopy. The 2 lowest-lying states are nonmagnetic singlets. This material is likely to have an induced magnetic moment, mainly due to mixing of the 2 lowest states. Sp. heat and magnetic susceptibility measurements were made of  $Tm_{1-x}Lu_xCu_2Si_2$  ( $x = 0, 0.025, 0.050, 0.10, 0.25, 0.50$  and 1) to det. the crystal-field-level scheme and compare it with the Moessbauer data. The satn. magnetization of the antiferromagnetic phase is  $3.2 \mu B$  and the moment is directed along the tetragonal c-axis. No direct exptl. evidence is known to support this prediction.

C.A. 1987, 107, n26