

The RNiAl and RCuAl compounds belong to a large group of RTX compounds (R ~ rare-earth, T ~ transition metal, X ~ p-metal) crystallizing in the ZrNiAl-type hexagonal structure, space group P-62m (group No.189). Very interesting behaviour has been observed for TbNi_{1-x}Cu_xAl system, what has been attributed to a change of mechanisms responsible for the magnetic ordering. In comparison to it, ErNi_{1-x}Cu_xAl series represent a more complex system. Change of magnetocrystalline anisotropy between the boundary stoichiometric concentrations is involved additionally. ErNiAl is an antiferromagnet (AF) with magnetic moments aligned within the basal plane below 6.2 K, ErCuAl is a simple ferromagnet (F) with moments aligned along the c-axis below 6.8 K. While increasing parameter x, a dramatic 'jump' of lattice constants occurs between x = 0.5 and 0.6 in temperatures down to 5 K. The magnetization and heat capacity data indicate that the change from AF to F ordering occurs between x = 0.2 and x = 0.4. In the range 0.05 < x < 0.20 there is possible the coexistence of F and AF alignment, the samples in this region embody two phase transitions. This was for x = 0.05 confirmed by heat capacity measurements. The samples with x > 0.4 exhibit ferromagnetic behaviour. The neutron diffraction measurements are desired for the final decision about the details of the ordering of Er-moments in the studied series.