EFFECT OF PRESSURE ON MAGNETIC TRANSFORMATIONS IN AN IRON-RHODIUM ALLOY

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The effect of pressure on the Curie point T_C and on the phase transition temperature from the antiferromagnetic to ferromagnetic state T_0 is investigated for an equiatomic iron-rhodium alloy. The phase $T-P$ diagram of the alloy is plotted for pressures up to 120 kbars and temperatures up to 700° K. The values of T_0 and T_C at atmospheric pressure are 365 and 760° K. Up to pressures ≈30 kbars the temperature T_0 increases and the Curie poine decreases, the slopes being $dT_0/dP=4.7$ degree·kbar^{-1} and $dT_C/dP=-1$ degree·kbar^{-1} respectively. On further increase of pressure the quantities dT_0/dP and dT_C/dP tend to zero. The triple point of coexistence of the antiferromagnetic, ferromagnetic and paramagnetic phases is located at pressures between 75 and 80 kbars. The phase transition from the antiferromagnetic to paramagnetic state, which occurs at pressures exceeding 80 kbars, is a transition of the first kind and the temperature of the transformation is independent of pressure.