

HEAT CAPACITY OF Au-Ni ALLOYS

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These last years, the solid state physicists took a great interest in the appearance of ferromagnetism, featured in particular by complex magnetic properties and anomalous heat capacities. In the high concentration alloys, the appearance of ferromagnetism is usually dominated by magnetic cluster effects.

The Cu-Ni system has been the most widely discussed, but surprisingly very few informations about Au-Ni are available. The critical concentration for appearance of ferromagnetism is located at 40% and we noticed no mictomagnetism behaviour. The number of clusters is relatively small, in agreement with the small upturn observed in the C/T versus T^2 curve, where C is the heat capacity and T the temperature. The variation of the linear heat capacity coefficient as a function of the Ni concentration shows a peak around 40%.

The study of this system is still in progress in the range of 20 to 60% Ni.