

MODELS FOR THE DESCRIPTION OF ALLOY
FORMATION WITH NONEQUILIBRIUM
COMPOSITION IN THE DIFFUSION
CONTACT REGION BETWEEN TWO
COMPONENTS UNDER PULSE
LOADING

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S u m m a r y

Formation of metastable alloys, the solubility limits of which are much higher than the corresponding equilibrium values and depend on the deformation rate, are observed very often in experiments dealing with diffusion in metals and alloys under pulse loading. Three microscopic models based on the concept of "ballistic jumps", which was put forward by G. Martin *et al.* for metals under irradiation or ball-milling conditions, have been proposed to describe this process: (i) the exchange-diffusion model, (ii) the model of interstitial migration, and (iii) the vacancy model of diffusion. Dynamic phase diagrams have been calculated in the framework of all those models. A qualitative agreement between the theoretical results and available experimental data has been obtained.