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# Phase Equilibria in the Ni-Mn-Sb Alloy System

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**Abstract**

Phase equilibria and ordered phase regions in the Ni-Mn-Sb system at 700 and 900 °C and the martensite phase region at room temperature were determined mainly by the diffusion triple method. It was confirmed that single-phase region of the ordered bcc phases exists in a wide composition range of a central part at both 700 and 900 °C and that the region is divided into two regions of half-Heusler $C1_b$ and full-Heusler $L2_1$ at 700 °C, while the $C1_b$ phase is missing at 900 °C. The *B2* + $L2_1$ phase separation was also confirmed in a certain composition range near Ni-50%Mn, and the iso-*M*s (= RT) line in the $L2_1$ phase region was also estimated to be located from 12 to 16 at.% Sb.

**Keywords**

Phase diagram; Ni–Mn–Sb; martensitic transformation; magnetic shape memory; order–disorder transition; Heusler alloy

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