Ni-Ti Alloys Produced by Powder Metallurgy

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This paper deals with the influence of alloying elements on the properties of Ni-Ti alloys. The base alloy was the binary alloy Ni-Ti with 54 wt. % Ni and 46 wt. % Ti. Alloying elements (aluminium, iron and vanadium) in an amount of 5 wt. % were added to this alloy. All samples have been prepared by the method of powder metallurgy – reactive sintering at 1100 °C for 20 minutes. Microstructure, phase composition (especially amount of the Ti_2Ni phase), process of sintering and the formation temperature of intermetallic phase NiTi, transformation temperatures and mechanical properties have been examined in these alloys. The corrosion characteristics were measured on the Ni-Ti and NiTiV5 alloys.

Keywords: Ni-Ti, powder metallurgy, reactive sintering.

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