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Mechanical Properties of Astaloy 85Mo and Astaloy CrM containing Maganese

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In this work, the usage of manganese (Mn) as an inexpensive alloying element for ferrous powder metallurgy was investigated. The mechanical properties of sintered Astaloy 85Mo and Astaloy CrM with different Mn and carbon (C) content were compared. Ferromanganese (FeMn) 1.25% and 2.5% and graphite 0.2%, 0.4%, and 0.6% by weight were mixed with Astaloy 85Mo and Astaloy CrM. The change of microstructure from the increasing Mn and C content can enhanced the mechanical properties of sintered Astaloy 85Mo and Astaloy CrM. However, the distribution of Mn in the samples was extremely depended on other alloying elements. The uniform distribution of Mn in Astaloy CrM resulted in the improved mechanical properties.

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