

Title (en)

METHOD FOR MOLDING ALUMINUM ALLOY POWDER, AND ALUMINUM ALLOY MEMBER

Title (de)

VERFAHREN ZUM FORMEN EINES ALUMINIUMLEGIERUNGSPULVERS UND ALUMINIUMLEGIERUNGSTEIL

Title (fr)

PROCÉDÉ DE MOULAGE DE POUDRE D'ALLIAGE D'ALUMINIUM ET ÉLÉMENT EN ALLIAGE D'ALUMINIUM

Publication

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Application

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- JP 2013064735 W 20130528

Abstract (en)

A method for forming an aluminum alloy powder is provided which allows a formed body of high properties to be obtained. The method for forming an aluminum alloy powder according to the present invention is characterized by comprising: a compacting step that applies a first pressure (P1) to an aluminum alloy powder to obtain a sparsely compact material, the aluminum alloy powder comprising microparticles of aluminum alloy, the sparsely compact material being such that the microparticles are intertangled and in contact with one another by plastic deformation while leaving spaces therebetween; and a forming step that applies a second pressure (P2) to the sparsely compact material at a forming temperature to obtain a dense formed body in which the microparticles are metallogically bonded to one another, the forming temperature being a temperature at which no liquid phase occurs at surfaces of the microparticles, the pressure ratio of the second pressure (P2) to the first pressure (P1) (P2/P1) being 1.2 or more. Surface oxide films on the microparticles that constitute the sparsely compact material are broken by the forming step to expose new surfaces, so that the microparticles are metallogically bonded. Consequently, it has become possible to obtain a formed body that has excellent strength and ductility and is dense and homogeneous.

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