

Title (en)

Method for producing a powder of a metal alloy

Title (de)

Verfahren zur Herstellung eines Pulvers einer Metalllegierung

Title (fr)

Procédé de fabrication d'une poudre d'un alliage métallique

Publication

EP 2689873 B1 20180808 (DE)

Application

EP 13170994 A 20130607

Priority

AT 3042012 U 20120725

Abstract (en)

[origin: EP2689873A1] The process comprises melting and refining a first metal and a further metal at a melting temperature of 600[deg] C, and sputtering the melt by a primary gas having a first gas flow and a secondary gas having a second gas flow. The melt is cooled and is solidified to a powder during sputtering. A flow of material (1) is cooled and solidified during sputtering, and is affected by gravity. The method further comprises introducing the melt to a heatable container (2) or continuously supplying to the heatable container through a pre-melting alloying furnace of a pump and/or channel system. The process comprises melting and refining a first metal and a further metal at a melting temperature of 600[deg] C, and sputtering the melt by a primary gas having a first gas flow and a secondary gas having a second gas flow. The melt is cooled and is solidified to a powder during sputtering. A flow of material (1) is cooled and solidified during sputtering, and is affected by gravity. The method further comprises introducing the melt to a heatable container (2) or continuously supplying to the heatable container through a pre-melting alloying furnace of a pump and/or channel system before the sputtering, separating the powder using a classification device such as an ultrasonic screening machine into a coarse material and fine material to remove coarse material having a grain diameter of 1000 mu m, and recycling the coarse material to the melt. The heatable container comprises, at its lower end, a nozzle system (3) and supply lines (4,5) for the primary gas and secondary gas. The flow of material is cooled by a water-cooling spray tower. The primary gas and the secondary gas are heated at a temperature of 400[deg] C. The secondary gas flow is less than the first gas flow, and has a flow rate of 90 kg/h. The first gas flow has a flow rate of 700 kg/h. The primary gas and/or secondary gas is inert gas to prevent oxidation. The powder is further separated by a cyclone into the fine material and coarse material, where all grains of fine material have diameters of less than 1000 mu m. The grains (90%) of the fine material have diameters of 10-1000 mu m, and 50% of the grains of the fine material have diameter of 3-800 mu m. The powder grains have a spherical, acicular or spattered shape.

IPC 8 full level

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CPC (source: EP)

B22F 9/082 (2013.01); **C22C 18/00** (2013.01); **C22C 18/04** (2013.01); **B22F 2009/0844** (2013.01); **B22F 2009/0888** (2013.01)

Citation (examination)

US 5071067 A 19911210 - LARSSON HANS-GUNNAR [SE]

Cited by

CN109530709A; EP3725439A3; CN113600820A; EP3725439A2

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AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

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