

Title (en)

TREATMENT OF MELT FOR ATOMIZATION TECHNOLOGY

Title (de)

BEHANDLUNG VON SCHMELZE FÜR DIE ZERSTÄUBUNGSTECHNIK

Title (fr)

TRAITEMENT DE MATIÈRE FONDUE DESTINÉE À UNE TECHNOLOGIE D'ATOMISATION

Publication

EP 3525966 A1 20190821 (EN)

Application

EP 17804009 A 20171016

Priority

- US 201615295733 A 20161017
- US 2017056736 W 20171016

Abstract (en)

[origin: US2018104745A1] An improved method of manufacturing a powder metal material by water, gas, plasma, or rotating disk atomization is provided. The method includes adding at least one additive to a melted metal material before or during the atomization process. The at least one additive forms a protective gas atmosphere surrounding the melted metal material which is at least three times greater than the volume of melt to be treated. The protective atmosphere prevents introduction or re-introduction of contaminants, such as sulfur (S) and oxygen (O₂), into the material. The atomized particles produced include at least one of the following advantages: median circularity of at least 0.60, median roundness of at least 0.60, less internal pores, less internal oxides, and an increased sphericity of the microstructural phases and/or constituents.

IPC 8 full level

B22F 9/08 (2006.01); **B22F 1/065** (2022.01); **C21C 1/02** (2006.01); **C21C 1/10** (2006.01); **C21C 7/00** (2006.01); **C21C 7/06** (2006.01); **C21C 7/064** (2006.01); **C21C 7/072** (2006.01); **C22B 9/05** (2006.01)

CPC (source: EP KR US)

B22F 1/065 (2022.01 - EP KR US); **B22F 1/09** (2022.01 - EP KR US); **B22F 9/082** (2013.01 - EP KR US); **C21C 1/02** (2013.01 - EP US); **C21C 1/025** (2013.01 - EP KR US); **C21C 1/105** (2013.01 - EP KR US); **C21C 7/0056** (2013.01 - EP KR US); **C21C 7/06** (2013.01 - EP US); **C21C 7/0645** (2013.01 - EP KR US); **C21C 7/072** (2013.01 - EP KR US); **C22B 9/05** (2013.01 - EP KR US); **B22F 2009/0828** (2013.01 - EP KR US); **B22F 2009/0844** (2013.01 - KR US); **B22F 2998/10** (2013.01 - KR US); **C21C 2007/0062** (2013.01 - EP KR US); **Y02P 10/25** (2015.11 - EP)

Citation (search report)

See references of WO 2018075380A1

Designated contracting state (EPC)

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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DOCDB simple family (application)

US 201615295733 A 20161017; CA 3040871 A 20171016; CN 201780078104 A 20171016; EP 17804009 A 20171016; JP 2019521461 A 20171016; KR 20197014145 A 20171016; US 2017056736 W 20171016