

Title (en)
METHOD OF FORMING MO-SI-B POWDER

Title (de)
VERFAHREN ZUR HERSTELLUNG VON MO-SI-B-PULVER

Title (fr)
PROCÉDÉ DE FORMATION DE POUDRE MO-SI-B

Publication
EP 3254785 A1 20171213 (EN)

Application
EP 17175229 A 20170609

Priority
US 201615179622 A 20160610

Abstract (en)
A method of forming Mo-Si-B alloy powder includes preparing a mixture that includes Mo powder, Si 3 N 4 powder and BN powder, adding a polymer binder and liquid to the mixture to form a slurry, spray drying the slurry to form a spray dried powder containing Mo powder, Si 3 N 4 powder and BN powder particles, and thermally treating the spray dried powder to remove the binder, alloy the powders of the spray dried powder, and remove carbon, nitrogen and oxygen atoms, wherein thermally treating the spray dried powder forms at least some partially sintered Mo-Si-B alloy powder pieces. The partially sintered Mo-Si-B alloy powder pieces are then milled in a milling container having contact surfaces composed of Mo-based material or lined and/or coated with Mo-based material to break down the pieces, and the milled Mo-Si-B alloy powder pieces are sieved to reclaim the Mo-Si-B alloy powder.

IPC 8 full level
B22F 9/04 (2006.01); **C22C 1/04** (2006.01)

CPC (source: EP US)
B22F 9/04 (2013.01 - EP); **C22C 1/045** (2013.01 - EP US); **C22C 1/047** (2023.01 - EP); **B22F 2998/10** (2013.01 - EP)

Citation (applicant)

- US 5595616 A 19970121 - BERCZIK DOUGLAS M [US]
- US 5693156 A 19971202 - BERCZIK DOUGLAS M [US]
- US 6652674 B1 20031125 - WOODARD SHIELA RHEA [US], et al
- MIDDLEMAS, MICHAEL ROBERT: "Doctoral dissertation", 2009, GEORGIA TECH UNIVERSITY SMARTECH LIBRARY, article "Fabrication, strength and oxidation of molybdenum-silicon-boron alloys from reaction synthesis"

Citation (search report)

- [XYI] EP 2799163 A1 20141105 - ALMT CORP [JP]
- [IY] US 2009011266 A1 20090108 - COCHRAN JOE K [US], et al
- [AD] US 5595616 A 19970121 - BERCZIK DOUGLAS M [US]
- [Y] CABOURO G ET AL: "Dense Mosiproduced by reactive flash sintering: Control of Mo/Si agglomerates prepared by high-energy ball milling", POWDER TECHNOLOGY, vol. 208, no. 2, 26 August 2010 (2010-08-26), pages 526 - 531, XP028175710, ISSN: 0032-5910, [retrieved on 20100826], DOI: 10.1016/J.POWTEC.2010.08.054
- [IY] MICHAEL ROBERT MIDDLEMAS: "FABRICATION, STRENGTH AND OXIDATION OF MOLYBDENUM-SILICON- BORON ALLOYS FROM REACTION SYNTHESIS", 31 May 2009 (2009-05-31), XP055418726, Retrieved from the Internet <URL:https://smartech.gatech.edu/bitstream/handle/1853/28253/middlemas_michael_r_200905_phd.pdf?sequence=1&isAllowed=y> [retrieved on 20171024]

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

Designated extension state (EPC)
BA ME

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