

Title (en)

PROCESS FOR MANUFACTURING THREE-DIMENSIONAL PARTS MADE OF ALUMINIUM-TITANIUM ALLOY

Title (de)

VERFAHREN ZUR HERSTELLUNG DREIDIMENSIONALER TEILE AUS EINER ALUMINIUM-TITAN-LEGIERUNG

Title (fr)

PROCÉDÉ DE FABRICATION DE PIÈCES TRIDIMENSIONNELLES EN ALLIAGE D'ALUMINIUM ET DE TITANE

Publication

**EP 3223981 B1 20240117 (FR)**

Application

**EP 15817955 A 20151124**

Priority

- FR 1461443 A 20141125
- FR 2015053187 W 20151124

Abstract (en)

[origin: WO2016083724A1] The invention relates to a process for manufacturing a sintered three-dimensional part comprising an alloy based on titanium, the process comprising the following steps: the preparation of an injection composition (step E10) comprising a binder and a powder of an alloy based on titanium comprising aluminium and/or chromium as alloying element, the injection (step E20) of the injection composition into a cavity of a mould so as to obtain a blank of the part to be formed, the selective elimination of the binder present in the blank (step E50), a first step of sintering (step E601) of the powder of the alloy based on titanium, the powder being, during the first sintering step, subjected to a first pressure greater than or equal to 1 mbar in order to obtain a preform of the part made of sintered alloy powder, and a second sintering step, carried out after the first sintering step, during which a second pressure is imposed (step E602), the second pressure being lower than the first pressure, the application time of the second pressure being chosen so that the weight content of aluminium and/or of chromium in a 200 µm thick layer located at the surface of the preform does not vary by more than 5% as a relative value following the second sintering step.

IPC 8 full level

**B22F 3/10** (2006.01); **B22F 3/22** (2006.01); **B22F 5/04** (2006.01); **C22C 1/04** (2023.01); **C22C 14/00** (2006.01)

CPC (source: CN EP US)

**B22F 3/101** (2013.01 - CN EP US); **B22F 3/1017** (2013.01 - CN); **B22F 3/16** (2013.01 - US); **B22F 3/225** (2013.01 - CN EP US); **B22F 5/04** (2013.01 - EP US); **C22C 1/0458** (2013.01 - CN); **C22C 14/00** (2013.01 - CN EP US); **B22F 2998/10** (2013.01 - CN EP US); **C22C 1/0458** (2013.01 - EP US)

C-Set (source: CN EP US)

**B22F 2998/10 + B22F 3/225 + B22F 3/1017**

Citation (examination)

US 6350407 B1 20020226 - SAKATA MASAOKI [JP], et al

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

DOCDB simple family (publication)

**FR 3028784 A1 20160527**; **FR 3028784 B1 20190510**; CN 107002178 A 20170801; CN 107002178 B 20191101; EP 3223981 A1 20171004; EP 3223981 B1 20240117; US 2017321303 A1 20171109; WO 2016083724 A1 20160602

DOCDB simple family (application)

**FR 1461443 A 20141125**; CN 201580063833 A 20151124; EP 15817955 A 20151124; FR 2015053187 W 20151124; US 201515529011 A 20151124