

Title (en)  
TITANIUM ALUMINIDE ALLOY MATERIAL FOR HOT FORGING, FORGING METHOD FOR TITANIUM ALUMINIDE ALLOY MATERIAL, AND FORGED BODY

Title (de)  
TITAN-ALUMINID-LEGIERUNGSMATERIAL FÜR WARMSCHMIEDEN, SCHMIEDEVERFAHREN FÜR TITANALUMINID-LEGIERUNGSMATERIAL UND GESCHMIEDETER KÖRPER

Title (fr)  
MATÉRIAU D'ALLIAGE D'ALUMINURE DE TITANE POUR FORGEAGE À CHAUD, PROCÉDÉ DE FORGEAGE POUR MATÉRIAU D'ALLIAGE D'ALUMINURE DE TITANE, ET CORPS FORGÉ

Publication  
**EP 3943627 A1 20220126 (EN)**

Application  
**EP 20773214 A 20200227**

Priority  
• JP 2019049746 A 20190318  
• JP 2020007922 W 20200227

Abstract (en)  
A TiAl alloy material for hot forging has a chemical composition including, by atom, Al of 43.0% or greater and 45.0% or less, Nb of 4.0% or greater and 6.0% or less, Cr of 1.5% or greater and 3.5% or less, and Ti and inevitable impurities as a residue. The TiAl alloy material for hot forging may further include boron as necessary. The TiAl alloy material for hot forging is prepared and kept at a temperature within a range of a phase equilibrium temperature of any of a  $\beta$ -phase, a  $(\beta+\alpha)$  phase, and a  $(\beta+\alpha+\gamma)$  phase in a phase diagram of a TiAl alloy so as to be forged in a non-oxidizing atmosphere. The TiAl alloy material for hot forging is subjected to a first heat treatment and a second heat treatment after forging. This improves isothermal forgeability of the TiAl alloy material, so as to execute the hot forging at a lower forging temperature.

IPC 8 full level  
**B21J 5/00** (2006.01); **C22C 14/00** (2006.01); **C22F 1/00** (2006.01); **C22F 1/18** (2006.01)

CPC (source: EP US)  
**B21J 5/00** (2013.01 - US); **C22C 14/00** (2013.01 - EP US); **C22F 1/183** (2013.01 - EP US)

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

DOCDB simple family (publication)  
**US 2021404042 A1 20211230**; EP 3943627 A1 20220126; EP 3943627 A4 20221116; JP 7233659 B2 20230307;  
JP WO2020189215 A1 20200924; WO 2020189215 A1 20200924

DOCDB simple family (application)  
**US 202117447479 A 20210913**; EP 20773214 A 20200227; JP 2020007922 W 20200227; JP 2021507142 A 20200227