

Title (en)

A method of heat treating titanium aluminide

Title (de)

Verfahren zur Wärmebehandlung von TiAl-Legierungen

Title (fr)

Procédé pour le traitement thermique des alliages de TiAl

Publication

**EP 1507017 A1 20050216 (EN)**

Application

**EP 04254344 A 20040721**

Priority

GB 0319061 A 20030814

Abstract (en)

A gamma titanium aluminide alloy consisting of 46at% aluminium, 8at% niobium, up to 0.07at% carbon and the balance titanium plus incidental impurities has an alpha transus temperature  $T_{\alpha} = 1335$  DEG C. The gamma titanium aluminide alloy was heated to a temperature  $T_1 = 1360$  DEG C and was held at  $T_1 = 1360$  DEG C for 1 hour or longer. The gamma titanium aluminide alloy was fluidised bed, or salt bath, quenched to a temperature  $T_2$ , where  $900 \text{ DEG C} < T_2 < 1200 \text{ DEG C}$ , and was held at temperature  $T_2$  for a sufficient time to allow the massive transformation to go to completion. The gamma titanium aluminide alloy was heated to a temperature  $T_3 = 1300$  DEG C or  $1320$  DEG C and was held at  $T_2$  for 4 hours. The gamma titanium aluminide alloy was air cooled to ambient temperature. The gamma titanium aluminide alloy has a fine duplex microstructure comprising differently orientated alpha plates in a massively transformed gamma matrix. The heat treatment reduces quenching stresses, allows larger castings and a broader range of titanium aluminide alloys to be grain refined. <IMAGE>

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**C22F 1/18**

IPC 8 full level

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CPC (source: EP US)

**C22F 1/183** (2013.01 - EP US)

Citation (search report)

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Citation (examination)

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- US 5205875 A 19930427 - HUANG SHYH-CHIN [US]
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