

Title (en)

PROCESS FOR OBTAINING Y-TiAl PIECES BY CASTING

Title (de)

VERFAHREN ZUM ERHALT VON Y-TiAl-TEILEN DURCH GIESSEN

Title (fr)

PROCEDE POUR PRODUIRE DES PIECES EN Y-TiAl PAR MOULAGE

Publication

EP 1670604 A1 20060621 (EN)

Application

EP 04775189 A 20040910

Priority

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- PT 10301803 A 20030912

Abstract (en)

[origin: WO2005025778A1] The present invention concerns the development of a process for obtaining gamma-TiAl castings, with a maximum thickness of 20 mm, starting from melting charges constituted by commercially pure Ti and Al. In this process the metallic charge is induction melted in a ZrO₂ ceramic crucible inside coated with Y₂O₃, the pouring being performed by centrifugation in ZrO₂ moulds, with an Y₂O₃ contact coating, obtained by the lost wax moulding process. The whole sequence of operations is accomplished under argon atmosphere. The use of this process, besides avoiding the use of previously melted charges needing very specific furnaces, allows to obtain parts with homogeneous chemical composition and very low contamination with residual elements, without surface oxidation, with a hardness quite uniform from the surface to the inside of castings, which reveal a surface finishing identical to that recommended by the international standards for steel castings obtained by the same moulding process.

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