

Title (en)

ALLOY FOR HIGH TEMPERATURE TOOLING APPLICATIONS

Title (de)

LEGIERUNG FÜR HOCHTEMPERATUR-WERKZEUGANWENDUNGEN

Title (fr)

ALLIAGE POUR APPLICATIONS DE FORMAGE D'ACIER À HAUTE TEMPÉRATURE

Publication

**EP 2780485 A1 20140924 (EN)**

Application

**EP 12813975 A 20121116**

Priority

- IB 2012056511 W 20121116
- TR 201111434 A 20111118

Abstract (en)

[origin: WO2013072899A1] Thermal fatigue is the predominant mechanism that limits the service life of dies in semi-solid forming of steels since the feedstock to be shaped has a paste-like character. A novel alloy, more resistant to these conditions than any other alloy, has been developed. Eutectic carbides in Stellite alloys are replaced in this novel alloy with molybdenum-rich intermetallic compound particles between dendrites. This novel alloy offers at least 3 times longer service life with respect to Stellite 6 alloy that has been tested under conditions that mimic the steel semi-solid forming process and has been identified as the most suitable. The exceptional performance of the novel alloy is attributed to its outstanding resistance to oxidation and to softening at elevated temperatures and to its cobalt based matrix free from the hard and brittle carbides that have a negative impact on crack growth process.

IPC 8 full level

**C22C 19/07** (2006.01)

CPC (source: EP US)

**C22C 19/07** (2013.01 - EP US); **C22C 30/00** (2013.01 - US)

Citation (search report)

See references of WO 2013072899A1

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)

**WO 2013072899 A1 20130523**; CN 104080933 A 20141001; CN 104080933 B 20160330; EP 2780485 A1 20140924; EP 2780485 B1 20181024; TR 201819886 T4 20190121; US 2014334968 A1 20141113

DOCDB simple family (application)

**IB 2012056511 W 20121116**; CN 201280056717 A 20121116; EP 12813975 A 20121116; TR 201819886 T 20121116; US 201214359105 A 20121116