Title (en)

ALLOYS WITH LOW COEFFICIENT OF THERMAL EXPANSION AS PDC CATALYSTS AND BINDERS

Title (de)

LEGIERUNGEN MIT GERINGEM WÄRMEAUSDEHNUNGSKOEFFIZIENTEN ALS PDC-KATALYSATOREN UND -BINDER

Title (fr)

ALLIAGES À FAIBLE COEFFICIENT DE DILATATION THERMIQUE EN TANT QUE CATALYSEURS ET LIANTS DE PDC

Publication

EP 2593630 A1 20130522 (EN)

Application

EP 11807354 A 20110711

Priority

- US 36412210 P 20100714
- US 2011043589 W 20110711

Abstract (en)

[origin: US2012012402A1] A cutting table includes a lattice structure and a catalyst material deposited within voids formed within the lattice. The catalyst material is deposited in the voids during a sintering process that forms the lattice. The catalyst material has a coefficient of thermal expansion that is less than that of cobalt. The catalyst material is any one of chromium, tantalum, ruthenium, an alloy of cobalt, an alloy of a Group VIII metal and at least one non-catalyst metal, an alloy of two or more Group VIII metals, or a eutectic alloy. In certain embodiments, the catalyst material has a thermal conductivity that is greater than that of cobalt. In certain embodiments, the cutting table is bonded to a substrate, which is formed from a substrate material and a binder material. In some embodiments, the binder material and the catalyst material are the same; while in others, they are different.

IPC 8 full level

E21B 10/567 (2006.01)

CPC (source: EP US)

B24D 3/10 (2013.01 - US); **B24D 99/005** (2013.01 - EP US); **C22C 26/00** (2013.01 - EP US); **E21B 10/5735** (2013.01 - EP US); B22F 2005/001 (2013.01 - EP US); C22C 2204/00 (2013.01 - EP US)

Citation (search report)

See references of WO 2012009285A1

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)

US 2012012402 A1 20120119; CN 103261564 A 20130821; EP 2593630 A1 20130522; RU 2013106267 A 20140820; RU 2576724 C2 20160310; US 2014223835 A1 20140814; WO 2012009285 A1 20120119

DOCDB simple family (application)

US 201113180414 A 20110711; CN 201180043653 A 20110711; EP 11807354 A 20110711; RU 2013106267 A 20110711; US 2011043589 W 20110711; US 201414255740 A 20140417