

Title (en)

HIGH STRENGTH BAKE-HARDENABLE LOW DENSITY STEEL AND METHOD FOR PRODUCING SAID STEEL

Title (de)

HOCHFESTER, HÄRTBARER STAHL VON GERINGER DICHTHE UND VERFAHREN ZUR HERSTELLUNG DES BESAGTEN STAHL

Title (fr)

ACIER HAUTE RÉSISTANCE À FAIBLE DENSITÉ DURCISSABLE PAR CUISSON ET PROCÉDÉ DE PRODUCTION DE CET ACIER

Publication

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Application

EP 13704616 A 20130219

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- EP 2013053257 W 20130219
- EP 13704616 A 20130219

Abstract (en)

[origin: WO2013124264A1] This invention relates to a high strength bake-hardenable low density steel and to a method for producing said steel.

IPC 8 full level

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Citation (opposition)

Opponent : ThyssenKrupp Steel Europe AG

- JP 2006176844 A 20060706 - NIPPON STEEL CORP
- JP 2005029889 A 20050203 - NIPPON STEEL CORP, et al
- JP 2001271148 A 20011002 - NISSHIN STEEL CO LTD
- DE 69329696 T2 20010613 - NIPPON STEEL CORP [JP]
- JP 2005120599 A 20050512 - SHIROKUMA CO LTD
- EP 0826787 A2 19980304 - KRUPP AG HOESCH KRUPP [DE], et al
- EP 1811048 A1 20070725 - NIPPON STEEL MATERIALS CO LTD [JP]
- JP H04252229 A 19920908 - ASAHI CHEMICAL IND
- EP 0495123 A1 19920722 - NIPPON KOKAN KK [JP]
- EP 0719872 A1 19960703 - PHILIP MORRIS PROD [US]
- LUTZ MEYER, MIKROLEGIERUNGSELEMENTE IM STAHL, THYSEN TECHNISCHE BERICHT, vol. 16, no. 1, 1984, pages 34 - 44
- LUTZ MEYER: "Neue Entwicklungen bei weichen und hochfesten mikrolegierten Stählen", ZEITSCHRIFT FÜR METALLKUNDE, vol. 81, no. 1, 1990, pages 1 - 7, XP055346295

Cited by

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DOCDB simple family (publication)

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