Title (en)

HIGH THERMAL DIFFUSIVITY AND HIGH WEAR RESISTANCE TOOL STEEL

Title (de)

WERKZEUGSTAHL MIT HOHEM THERMISCHEN DIFFUSIONSVERMÖGEN UND HOHER VERSCHLEISSFESTIGKEIT

Title (fr)

ACIER POUR OUTIL À DIFFUSIVITÉ THERMIQUE ÉLEVÉE ET PRÉSENTANT UNE RÉSISTANCE ÉLEVÉE À L'USURE

Publication

EP 3330401 A1 20180606 (EN)

Application

EP 17166724 A 20120113

Priority

- EP 11382004 A 20110113
- EP 12700396 A 20120113

Abstract (en)

A tool steel family with outstanding thermal diffusivity, hardness and wear resistance has been developed, also exhibiting good hardenability. Also its mechanical strength, as well as its yield strength, at ambient and high temperature (superior to 600°C) are high, due to a high alloying level in spite of the high thermal conductivity. Because of its high thermal conductivity and good toughness, steels of this invention have also good resistance to thermal fatigue and thermal shock. This steels are ideal for discontinuous processes where it is interesting to reduce cycle time and that require high hardness and/or wear resistance (plastic injection molding, other plastic forming processes and curing of thermosets, hot forming of sheet...). These tool steels are also appropriate for processes requiring high wear resistance and good resistance to thermal fatigue (forging, hot stamping, light-alloy injection...).

IPC 8 full level

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CPC (source: EP KR US)

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Citation (applicant)

- EP 1887096 A1 20080213 - ROVALMA SA [ES]
- EP 2236639 A1 20101006 - ROVALMA SA [ES], et al
- WO 2004046407 A1 20040603 - LEE IL-KYU [KR]
- JP H04147706 A 19920521 - KAWASAKI STEEL CO
- JP H11222650 A 19990817 - NIPPON KOSHUHA STEEL CO LTD, et al
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Citation (search report)

- [X] EP 1887096 A1 20080213 - ROVALMA SA [ES]
- [X] JP H11222650 A 19990817 - NIPPON KOSHUHA STEEL CO LTD, et al
- [A] WO 2004046407 A1 20040603 - LEE IL-KYU [KR]
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- [X] WO 2008084108 A1 20080717 - ROVALMA SA [ES], et al
- [X] WO 2008017341 A1 20080214 - ROVALMA SA [ES], et al
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- [X] WO 2010112319 A1 20101007 - ROVALMA SA [ES], et al

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