Title (en)

STEEL WITH HIGH WEAR RESISTANCE, HARDNESS AND CORROSION RESISTANCE AND LOW THERMAL CONDUCTIVITY, AND USE OF SUCH A STEEL

Title (de)

STAHL MIT HOHER VERSCHLEISSBESTÄNDIGKEIT, HÄRTE UND KORROSIONSBESTÄNDIGKEIT SOWIE NIEDRIGER WÄRMELEITFÄHIGKEIT UND VERWENDUNG EINES SOLCHEN STAHLS

Title (fr)

ACIER PRÉSENTANT UNE HAUTE RÉSISTANCE À L'USURE, UNE DURETÉ ÉLEVÉE, UNE BONNE RÉSISTANCE À LA CORROSION ET/OU UNE FAIBLE CONDUCTIVITÉ THERMIQUE ET UTILISATION D'UN TEL ACIER

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Application

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Abstract (en)

[origin: WO2016030396A1] The invention relates to steel for applications which require high wear resistance, a high degree of hardness, good corrosion resistance and/or low thermal conductivity, said steel being reliably producible on an industrial scale. The hardness of the steel according to the invention in the hardened state is at least 56 HRC. In order to obtain said steel, the microstructure of the steel in total contains at least 30 wt.-% hard phases, which, in addition to the TiC particles, consist of further carbide particles, oxide particles or nitride particles. The TiC particle content of the steel according to the invention is at least 20 wt.-%. The hard phase particles are embedded in a matrix that consists of (in wt.-%) 9.0 - 15.0% Cr, 5.0 - 9.0% Mo, 3.0 - 7.0% Ni, 6.0 - 11.0% Co, 0.3 - 1.5% Cu, 0.1 - 2.0% Ti, and 0.1 - 2.0% Al, the remainder being iron and inevitable impurities. The combination of properties makes said steel particularly suitable for the production of structural components, in particular blades or perforated plates which are required for the production and the recycling of plastics.

IPC 8 full level

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