Title (en)

HARDENED NICKEL-CHROMIUM-TITANIUM-ALUMINUM ALLOY WITH GOOD WEAR RESISTANCE, CREEP RESISTANCE, CORROSION RESISTANCE AND WORKABILITY

Title (de)

AUSHÄRTENDE NICKEL-CHROM-TITAN-ALUMINIUM-LEGIERUNG MIT GUTER VERSCHLEISSBESTÄNDIGKEIT, KRIECHFESTIGKEIT, KORROSIONSBESTÄNDIGKEIT UND VERARBEITBARKEIT

Title (fr)

ALLIAGE NICKEL-CHROME-TITANE-ALUMINIUM DURCISSANT PAR TREMPE ET PRÉSENTANT UNE BONNE RÉSISTANCE À L'USURE, AU FLUAGE ET À LA CORROSION, ET UNE BONNE USINABILITÉ

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2015117585A2] The invention relates to hardened nickel-chromium-titanium-aluminum wrought alloy with good wear resistance as well as very good resistance to corrosion at a high temperature, good creep resistance, and good workability containing, (in mass %) 5 - 35% chromium, 1.0 - 3.0% titanium, 0.6 - 2.0% aluminum, 0.005 - 0.10% carbon, 0.0005 - 0.050% nitrogen, 0.0005 - 0.030% phosphorus, max. 0.010% sulfur, max. 0.020% oxygen, max. 0.70% silicon, max. 2.0% manganese, max. 0.05% magnesium, max. 0.05% calcium, max. 2.0% molybdenum, max. 2.0% tungsten, max. 0.5 % niobium, max. 0.5% copper, max. 0.5 % vanadium, if required, 0 - 20% Fe, if required, 0 - 15% cobalt, if required 0 - 0.20% Zr, if required 0.0001 - 0.008% boron, the remainder being nickel and the usual impurities related to the method. The nickel content is greater than 35%. The relation of Cr + Fe + Co ≥ 26% (1) must be fulfilled in order to achieve good wear resistance and the relation fh ≥ 0 (2a) in which fh = 6.49 + 3.88 Ti + 1.36 Al - 0.301 Fe + (0.759 - 0.0209 Co) Co - 0.428 Cr - 28.2 C (2) must be fulfilled so that a sufficient solidness at high temperatures is obtained, Ti, Al, Fe, Co, Cr and C corresponding to the concentration of the relevant elements in mass % and fh in %.

IPC 8 full level

C22C 19/05 (2006.01)

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