

Title (en)
NICKEL-CHROMIUM-COBALT-TITANIUM-ALUMINUM ALLOY HAVING GOOD WEAR RESISTANCE, CREEP RESISTANCE, CORROSION RESISTANCE AND PROCESSABILITY

Title (de)
AUSHÄRTENDE NICKEL-CHROM-KOBALT-TITAN-ALUMINIUM-LEGIERUNG MIT GUTER VERSCHLEISSBESTÄNDIGKEIT, KRIECHFESTIGKEIT, KORROSIONSBESTÄNDIGKEIT UND VERARBEITBARKEIT

Title (fr)
ALLIAGE NICKEL-CHROME-COBALT-TITANE-ALUMINIUM PRÉSENTANT UNE RÉSISTANCE À L'USURE, UNE RÉSISTANCE AU FLUAGE, UNE RÉSISTANCE À LA CORROSION ÉLEVÉES ET UNE USINABILITÉ

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Application
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Priority

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Abstract (en)
[origin: WO2015117583A1] Hardening wrought nickel-chromium-cobalt-titanium-aluminium alloy with very good wear resistance combined with very good creep strength, good high-temperature corrosion resistance and good processability, said alloy comprising (in % by mass) > 18 to 31% chromium, 1.0 to 3.0% titanium, 0.6 to 2.0% aluminium, > 3.0 to 40% cobalt, 0.005 to 0.10% carbon, 0.0005 to 0.050% nitrogen, 0.0005 to 0.030% phosphorus, max. 0.010% sulphur, 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, optionally 0 to 20% Fe, optionally 0 to 0.20% Zr, optionally 0.0001 to 0.008% boron, remainder nickel and the conventional process-related impurities, wherein the nickel content is greater than 35%, wherein the relationship $Cr + Fe + Co \geq 25\%$ (1) has to be satisfied in order to achieve good wear resistance, and the relationship $fh \geq 0$ (2a), where $fh = 6.49 + 3.88 Ti + 1.36 Al - 0.301 Fe + (0.759 - 0.0209 Co) Co - 0.428 Cr - 28.2 C$, (2) has to be satisfied in order that an adequate strength at higher temperatures is provided, wherein Ti, Al, Fe, Co, Cr and C are the concentration of the elements in question in % by mass and fh is given in %.

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