

Title (en)
AUSTENITIC IRON-NICKEL-CHROMIUM-COPPER ALLOY

Title (de)
AUSTENITISCHE EISEN-NICKEL-CHROM-KUPFER-LEGIERUNG

Title (fr)
ALLIAGE AUSTENITIQUE FER-NICKEL-CHROME-CUIVRE

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Application
EP 08787849 A 20080326

Priority
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Abstract (en)
[origin: EP1975269A1] Austenitic alloy of iron-nickel-chromium-copper composition, comprises: nickel (Ni) (= 36%); chromium (Cr) ($\geq 0.02\%$); copper (Cu) ($\geq 0.1\%$); mixture of copper and cobalt (Co) (= 15%); manganese (Mn) (0.02-2%); mixture of aluminum (Al) and titanium (Ti) (0-3%); carbon (C) (0-2%); mixture of vanadium (V) and tungsten (W) (0-6%); mixture of niobium (Nb) and zirconium (Zr) (0-0.5%); molybdenum (Mo) (0-8%); tin (Sn) (= 1%); boron (B) (0-0.006%); mixture of sulfur (S), selenium (Se) and antimony (Sb) (= 0.008%); and mixture of calcium (Ca) and magnesium (Mg) (0-0.020%). Austenitic alloy of iron-nickel-chromium-copper composition, comprises: nickel (Ni) (= 36%); chromium (Cr) ($\geq 0.02\%$); copper (Cu) ($\geq 0.1\%$); mixture of copper and cobalt (Co) (= 15%); manganese (Mn) (0.02-2%); mixture of aluminum (Al) and titanium (Ti) (0-3%); carbon (C) (0-2%); mixture of vanadium (V) and tungsten (W) (0-6%); mixture of niobium (Nb) and zirconium (Zr) (0-0.5%); molybdenum (Mo) (0-8%); tin (Sn) (= 1%); boron (B) (0-0.006%); mixture of sulfur (S), selenium (Se) and antimony (Sb) (= 0.008%); and mixture of calcium (Ca) and magnesium (Mg) (0-0.020%). Where: the rest is iron and the impurities resulting from the elaboration, the percentages in Ni, Cr, Cu and Co alloy satisfying the following conditions: Co is less than Cu; Co is less than 4%, if Cr is greater than 7.5%; $Ni + 1.2Cr + (Cu/5)$ (I) is greater than 28%; and Cr is 7.5%, if Ni is greater than 32.5%; and the manganese content satisfying the following conditions if $6Ni - 2.5X + 4(Cu + Co)$ (III) (where X is $Cr + V + W + \text{silicon (Si)} + Al$) ≥ 205 , $Mn = Ni - 27.5 + Cu - Cr$, if $180.5 = (III) = 205$, $Mn = 4\%$, and if $(III) = 180.5$, $Mn = 2\%$. Independent claims are included for: (1) an electromagnetic device with self-regulation of temperature comprising the alloy; (2) a device with self-regulation of magnetic flux comprising the alloy; (3) a device with controlled dilation comprising the alloy; (4) current sensors, measurement transformers or magneto-harmonic sensor comprising the alloy; (5) electromagnetic motors and actuators comprising the alloy; (6) stators for horology engines comprising the alloy; (7) inductors or transformers for power electronics comprising the alloy; (8) bimetals comprising the alloy; (9) coil layer of horology engines or high sensitive electromagnetic relay comprising the alloy; and (10) temperature measurement devices or temperature marking devices, without contact, comprising the alloy; and (11) hypertextured substrates for epitaxy comprising the alloy.

IPC 8 full level
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CPC (source: EP KR US)
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