

Title (en)

COPPER-NICKEL-TIN ALLOY, METHOD FOR THE PRODUCTION AND USE THEREOF

Title (de)

KUPFER-NICKEL-ZINN-LEGIERUNG, VERFAHREN ZU DEREN HERSTELLUNG SOWIE DEREN VERWENDUNG

Title (fr)

ALLIAGE CUIVRE-NICKEL-ÉTAIN, PROCÉDÉ DE PRÉPARATION ET UTILISATION DE CELUI-CI

Publication

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Application

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Abstract (en)

[origin: WO2018014992A1] The invention relates to a high-strength copper-nickel-tin alloy with excellent castability, hot workability and cold workability, high resistance to abrasive wear, adhesive wear and fretting wear and improved resistance to corrosion and stress relaxation stability, consisting of (in weight %): 2.0 - 10.0 % Ni, 2.0 - 10.0 % Sn, 0.01 - 1.5 % Si, 0.01 - 1.0 % Fe, 0.002 - 0.45 % B, 0.001 - 0.15 % P, selectively up to a maximum of 2.0 % Co, optionally also up to a maximum 2.0 % Zn, selectively up to a maximum of 0.25 % Pb, the residue being copper and unavoidable impurities, characterised in that - the ratio Si/B of the element contents in wt.% of the elements silicon and boron is a minimum 0.4 and a maximum 8; such that the copper-nickel-tin alloy has Si-containing and B-containing phases and phases of the systems Ni-Si-B, Ni-B, Fe-B, Ni-P, Fe-P, Ni-Si and other Fe-containing phases which significantly improve the processing properties and use properties of the alloy. The invention also relates to a casting variant and a further-processed variant of the high-strength copper-nickel-tin alloy, to a production method, and to the use of the alloy.

IPC 8 full level

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