

Title (en)

COPPER TIN NICKEL PHOSPHORUS ALLOYS WITH IMPROVED STRENGTH AND FORMABILITY

Title (de)

KUPFER-ZINN-NICKEL-PHOSPHOR-LEGIERUNGEN MIT VERBESSERTER FESTIGKEIT UND FORMBARKEIT

Title (fr)

ALLIAGES À BASE DE CUIVRE, ÉTAIN, NICKEL, PHOSPHORE, À RÉSISTANCE ET APTITUDE AU FORMAGE ACCRUES

Publication

**EP 2215278 A4 20150902 (EN)**

Application

**EP 08837615 A 20081010**

Priority

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- US 97906407 P 20071010
- US 24953008 A 20081010

Abstract (en)

[origin: US2009098011A1] A new copper-based alloy is described along with a processing method to make a strip that can be used for various automotive interconnects. The alloy process combination yields a material with high strength and electrical conductivity with excellent formability. The combination of properties result from a Cu-Sn-Ni-P alloy with optional Mg additions and thermal-mechanical processing to make an alloy with a conductivity of 40% IACS, yield strength of 80 KSI, bend formability of 1t/1t minimum, and stress relaxation of 65% at 150° C. after 1000 hours. Processing can be modified to increase formability at the expense of yield strength. Improvements to conductivity come from changes in chemistry as well as processing. The new chemistry-process optimization results in a low cost alloy of Cu-Sn-Ni-P-Mg.

IPC 8 full level

**C22C 9/02** (2006.01); **C22C 9/04** (2006.01); **C22F 1/08** (2006.01)

CPC (source: EP US)

**C22C 9/02** (2013.01 - EP US); **C22C 9/04** (2013.01 - EP US); **C22C 9/06** (2013.01 - EP US); **C22F 1/08** (2013.01 - EP US); **H01B 1/026** (2013.01 - EP US)

Citation (search report)

- [X] US 2007148032 A1 20070628 - ARUGA YASUHIRO [JP], et al
- [A] US 5004520 A 19910402 - TSUJI MASAHIRO [JP], et al
- See references of WO 2009049201A1

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DOCDB simple family (publication)

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**US 24953008 A 20081010**; CA 2702358 A 20081010; CN 200880113779 A 20081010; EP 08837615 A 20081010; JP 2010529100 A 20081010; MX 2010003995 A 20081010; TW 97139291 A 20081013; US 2008079573 W 20081010