

Title (en)  
GRAIN-REFINED COPPER CASTING ALLOY WITH IRON AND BORON

Title (de)  
KORNGEFEINTE KUPFER-GUSSLEGIERUNG MIT EISEN UND BOR

Title (fr)  
ALLIAGE DE FONDERIE EN CUIVRE À GRAINS AFFINÉS COMPRENANT DU FER ET DU BORE

Publication  
**EP 3024956 B1 20180627 (DE)**

Application  
**EP 14735475 A 20140703**

Priority  
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Abstract (en)  
[origin: WO2015010768A1] The invention relates to a copper alloy with the following composition [in % by weight]: Cu from 70.0 to 97.0%; Si from 2.0 to 4.5%; B from 0.002 to 0.03%; Fe from 0.01 to 1.0%; if desired also up to 2.0% of Sn, if desired also up to 0.4% of Ni, if desired also up to 0.2% of P, if desired also up to 0.25% of Pb, and if desired in each case also up to 0.15% of As or Sb, the remainder being Zn and unavoidable impurities. The ratio of boron content to the sum of iron content and nickel content here is at least 0.025 and at most 0.12. The invention further relates to the use of boron and iron and optionally also nickel as means for obtaining grain-refined copper-zinc-silicon alloys.

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**C22C 1/06** (2013.01); **C22C 9/04** (2013.01)

Citation (opposition)  
Opponent : Otto Fuchs - Kommanditgesellschaft  
• CN 103114220 A 20130522 - XIAMEN LOTA INT CO LTD  
• US 2006078458 A1 20060413 - STROBL HEINZ [DE], et al  
• M. SADAYAPPAN: "Grain refinement of permanent mold cast copper base alloys", MATERIALS TECHNOLOGY LABORATORY, April 2004 (2004-04-01), XP009115928  
• ERNST BRUNHUBER: "Schmelz- und Legierungstechnik von Kupferwerkstoff- fen", 1959, article "Schmelz- und Legierungstechnik von Kupferwerkstoff- fen", pages: 74 - 78, XP055576348

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