

Title (en)  
COPPER ALLOY AND METHOD OF MANUFACTURING SAME

Title (de)  
KUPFERLEGIERUNG UND VERFAHREN ZU DEREN HERSTELLUNG

Title (fr)  
ALLIAGE DE CUIVRE ET PROCEDE DE FABRICATION CORRESPONDANT

Publication  
**EP 0947592 B1 20030326 (EN)**

Application  
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- JP 23759196 A 19960909
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- JP 402797 A 19970113
- JP 3184997 A 19970217
- JP 7411197 A 19970326
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Abstract (en)

[origin: EP0947592A1] The purpose of this invention is to provide metals, particularly brass, that have excellent mechanical strength, machinability, ductility in hot working, and corrosion resistance. The brass of this invention is roughly classified into four types of "alpha + gamma", "alpha + beta + gamma", "alpha + normal beta", and "alpha + reinforced beta". The alpha + gamma type of brass has crystal structure of alpha + gamma phases at room temperature, and its areal ratio of the alpha phase is 97-70%. The alpha + beta + gamma type of brass has crystal structure of alpha + beta + gamma phases at room temperature, and the areal ratio of each of the beta and gamma phases are 3-30. In these two types of brass, the gamma phase contains 8% or more of Sn. The alpha + normal beta type of brass has crystal structure of alpha + beta phases at room temperature, and its areal ratio of the beta phase is 20% or more. The alpha + reinforced beta type of brass has crystal structure of alpha + beta phases at room temperature, its areal ratio of the beta phase is 15% or more, and the beta phase contains 1.5% by weight or more of Sn. All the types of brass have crystal structure of alpha + beta phases in the recrystallization temperature zone, and its areal ratio of the beta phase is 30-80% in this temperature zone. The crystal grain sizes of the alpha and beta phases are 15 mu m or less, preferably 10 mu m or less, and the average minor axis of crystal grains of the gamma phase is 8 mu m or less, preferably 5 mu m or less. The alpha + gamma and alpha + beta + gamma types of brass have their apparent Zn contents of 37-46% by weight and overall Sn contents of 0.9-7% by weight. The other two types of brass have apparent Zn contents of 37-44% by weight. <IMAGE>

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Cited by

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