Title (en)

SOFTENING RESISTANT COPPER ALLOY, PREPARATION METHOD, AND APPLICATION THEREOF

Title (de)

ERWEICHUNGSBESTÄNDIGE KUPFERLEGIERUNG, HERSTELLUNGSVERFAHREN UND ANWENDUNG DAVON

Title (fr)

ALLIAGE DE CUIVRE RÉSISTANT À L'ADOUCISSEMENT, PROCÉDÉ DE PRÉPARATION ET APPLICATION CORRESPONDANTE

Publication

EP 3511432 A4 20190717 (EN)

Application

EP 17847871 A 20170818

Priority

- CN 201610813189 A 20160909
- CN 2017000536 W 20170818

Abstract (en)

[origin: US2019161831A1] A softening resistant copper alloy, a preparation method, and an application thereof, the softening-resistant copper alloy, comprising 0.1%-1.0 wt % Cr, 0.01%-0.2 wt % Zr, 0.01%-0.10 wt % Si, and ≤0.10 wt % Fe, and with the remaining of copper and inevitable impurities, wherein the microstructure of the copper alloy contains comprises: an elemental Cr phase, a Cu5Zr phase, and a Cr3Si phase. In the copper alloy of the present invention, the high-temperature softening resistance effect of the material is improved by adding a proper amount of Si to form a compound Cr3Si, and the strength and the high-temperature softening resistance of the material are further improved by strengthening the copper alloy matrix by the elemental Cr phase and the Cu5Zr phase, using the synergistic effect of the Cr3Si phase and the elemental Cr phase and by controlling the content of the impurity Fe. The copper alloy can be applied to contact lines and welding materials to prolong the service life of the materials.

IPC 8 full level

C22C 9/00 (2006.01); **C22F 1/08** (2006.01)

CPC (source: CN EP US)

C22C 9/00 (2013.01 - CN EP US); **C22F 1/08** (2013.01 - CN EP US); C22C 2202/00 (2013.01 - US)

Citation (search report)

- [XI] US 5705125 A 19980106 - GOTO MOTOO [JP], et al
- [E] EP 3375898 A1 20180919 - MITSUBISHI MATERIALS CORP [JP]
- [XAI] CN 102534291 A 20120704 - BEIJING NONFERROUS METAL
- See references of WO 2018045695A1

Designated contracting state (EPC)

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Designated extension state (EPC)

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