

## Title (en)

COPPER ALLOY WIRE ROD AND METHOD FOR PRODUCING COPPER ALLOY WIRE ROD

## Title (de)

WALZDRAHT AUS EINER KUPFERLEGIERUNG UND VERFAHREN ZUR HERSTELLUNG EINES WALZDRAHTS AUS EINER KUPFERLEGIERUNG

## Title (fr)

TIGE DE FIL EN ALLIAGE DE CUIVRE ET PROCÉDÉ PERMETTANT DE PRODUIRE UNE TIGE DE FIL EN ALLIAGE DE CUIVRE

## Publication

**EP 3770287 A4 20211124 (EN)**

## Application

**EP 19771832 A 20190218**

## Priority

- JP 2018052554 A 20180320
- JP 2019005812 W 20190218

## Abstract (en)

[origin: EP3770287A1] It is an object of the present invention is to provide a copper alloy wire rod having excellent tensile strength even when the diameter of the wire rod is narrowed without impairing excellent conductivity, and a method for manufacturing the same. A copper alloy wire rod having an alloy composition containing 1.5 to 6.0% by mass of Ag, 0 to 1.0% by mass of Mg, 0 to 1.0% by mass of Cr, and 0 to 1.0% by mass of Zr, with the balance being Cu and inevitable impurities, wherein, when a cross section parallel to a longitudinal direction of the copper alloy wire rod is observed, an area rate (A) of a precipitate precipitated coherently with Cu as a matrix phase in an observation region in a rectangular shape of 240 nm × 360 nm is within a range of the following expression (I):  $0.393 \times x - 0.589\% \leq A \leq 3.88 \times x - 5.81\%$  wherein x represents % by mass of Ag.

## IPC 8 full level

**C22C 1/02** (2006.01); **B21C 1/00** (2006.01); **C22C 9/00** (2006.01); **C22F 1/08** (2006.01); **H01B 1/02** (2006.01)

## CPC (source: EP KR)

**B21C 1/003** (2013.01 - EP); **C22C 1/02** (2013.01 - EP); **C22C 9/00** (2013.01 - EP KR); **C22F 1/08** (2013.01 - EP KR); **H01B 1/026** (2013.01 - EP)

## Citation (search report)

- [XY] JP 2011246802 A 20111208 - SUMITOMO ELECTRIC INDUSTRIES
- [Y] JP 2017002337 A 20170105 - FURUKAWA ELECTRIC CO LTD
- [XY] HU JIN-LI ET AL: "Morphology evolution of two-phase Cu-Ag alloys under different conditions", JOURNAL OF ZHEJIANG UNIVERSITY SCIENCE A, ZHEJIANG UNIVERSITY PRESS, CN, vol. 10, no. 3, 1 March 2009 (2009-03-01), pages 458 - 463, XP036034579, ISSN: 1673-565X, [retrieved on 20090301], DOI: 10.1631/JZUS.A0820389
- [Y] LIU J B ET AL: "Effects of Cr and Zr additions on the microstructure and properties of Cu6wt.% Ag alloys", MATERIALS SCIENCE AND ENGINEERING: A, ELSEVIER, AMSTERDAM, NL, vol. 532, 24 October 2011 (2011-10-24), pages 331 - 338, XP028394509, ISSN: 0921-5093, [retrieved on 20111103], DOI: 10.1016/J.MSEA.2011.10.099
- See references of WO 2019181320A1

## Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

## DOCDB simple family (publication)

**EP 3770287 A1 20210127**; **EP 3770287 A4 20211124**; CN 111032892 A 20200417; CN 111032892 B 20211214; JP WO2019181320 A1 20210204; KR 20200129027 A 20201117; WO 2019181320 A1 20190926

## DOCDB simple family (application)

**EP 19771832 A 20190218**; CN 201980003858 A 20190218; JP 2019005812 W 20190218; JP 2019529676 A 20190218; KR 20197029803 A 20190218