

Title (en)

IRON-COPPER ALLOY HAVING HIGH THERMAL CONDUCTIVITY AND METHOD FOR MANUFACTURING SAME

Title (de)

EISEN-KUPFER-LEGIERUNG MIT HOHER WÄRMELEITFÄHIGKEIT UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)

ALLIAGE FER-CUIVRE PRÉSENTANT UNE CONDUCTIVITÉ THERMIQUE ÉLEVÉE ET PROCÉDÉ POUR SA PRODUCTION

Publication

EP 3524703 A4 20200513 (EN)

Application

EP 17894924 A 20170206

Priority

KR 2017001262 W 20170206

Abstract (en)

[origin: EP3524703A1] The present invention provides a high thermal conductivity iron-copper (Fe-Cu) alloy and a method of manufacturing the same. The present invention provides an iron-copper alloy containing 55 to 95 atomic% of iron and 5 to 45 atomic% of copper. The present invention also provides an iron-copper alloy manufacturing method including a first step of preparing a melting furnace; a second step of adding iron and copper to the melting furnace and performing dissolution and molten metal formation so as to contain 55 to 95 atomic% of iron and 5 to 45 atomic% of copper based on the weight of the iron-copper alloy; a third step of stabilizing the molten metal; and a fourth step of pouring the stabilized molten metal into a casting mold and performing casting. The present invention provides an iron-copper alloy that is an iron-based alloy containing iron as a main component and having high thermal conductivity and mechanical properties along with, for example, an electromagnetic-wave shielding property and a soft magnetic property, which can be widely used for metal parts and electronic parts and machine parts.

IPC 8 full level

C22C 33/04 (2006.01); **B22F 1/05** (2022.01); **B22F 9/08** (2006.01); **C22C 33/02** (2006.01); **C22C 38/16** (2006.01)

CPC (source: EP US)

B22F 1/05 (2022.01 - EP US); **B22F 9/06** (2013.01 - US); **B22F 9/08** (2013.01 - EP); **C22C 33/00** (2013.01 - EP); **C22C 33/003** (2013.01 - US); **C22C 33/0278** (2013.01 - EP); **C22C 33/04** (2013.01 - EP US); **C22C 38/16** (2013.01 - EP); **C22C 45/02** (2013.01 - US); **B22F 2301/35** (2013.01 - US); **B22F 2304/10** (2013.01 - US)

Citation (search report)

- [XY] KR 20160112149 A 20160928 - DAECHANG CO LTD [KR]
- [XY] JP H0617163 A 19940125 - NAKANISHI MASAMITSU
- [Y] KR 20130078560 A 20130710 - KOREA MACH & MATERIALS INST [KR]
- [Y] JP 2000282165 A 20001010 - SHARP KK, et al
- [X] BACHMAIER A ET AL: "The formation of supersaturated solid solutions in FeCu alloys deformed by high-pressure torsion", ACTA MATERIALIA, ELSEVIER, OXFORD, GB, vol. 60, no. 3, 23 October 2011 (2011-10-23), pages 860 - 871, XP028445606, ISSN: 1359-6454, [retrieved on 20111025], DOI: 10.1016/J.ACTAMAT.2011.10.044
- See references of WO 2018143499A1

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 3524703 A1 20190814; **EP 3524703 A4 20200513**; **EP 3524703 B1 20211117**; CN 109923231 A 20190621; JP 2019525998 A 20190912; JP 6874126 B2 20210519; US 2020063250 A1 20200227; WO 2018143499 A1 20180809

DOCDB simple family (application)

EP 17894924 A 20170206; CN 201780069193 A 20170206; JP 2019515753 A 20170206; KR 2017001262 W 20170206; US 201716346421 A 20170206