

Title (en)

AN ULTRA-THIN FLEXIBLE TUBE MADE OF AN ALLOY AND THE MANUFACTURE PROCESS THEREOF

Title (de)

ULTRADÜNNES FLEXIBLES ROHR AUS EINER LEGIERUNG UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

TUBE FLEXIBLE ULTRA FIN CONSTITUÉ D'UN ALLIAGE ET SON PROCÉDÉ DE FABRICATION

Publication

EP 2210965 A1 20100728 (EN)

Application

EP 07816391 A 20070920

Priority

- CN 2007002775 W 20070920
- CN 200710074946 A 20070613

Abstract (en)

The present invention provides an ultra-thin flexible tube made of an alloy consisting of, in % by weight, Cr: 17 to 23, Ti: 0.1 to 0.35, Cu: 0.4 to 8.5, Mo: 0.2 to 2.4, Co: 0.01 to 0.06, Ni: 0.3 to 2.0, Nb: 0.2 to 1.0, V: 0.05 to 0.4, B: 0.001 to 0.020, Si: <1.0, Mn: <1.0, C: <0.020, N: <0.020, P: <0.035, S: <0.025, Mg: <0.005, O: <0.006, Al: <0.08, and the balance of Fe and inevitable impurities. The manufacture process of the tube comprises the following steps: cold-rolling to form an alloy sheet, quenching and tempering, flattening, slivering precisely, preparing roll, cleaning, positioning, rolling and shaping, welding, thermal retardation, detecting defect and marking, rectifying circularity and determining diameter, and coiling. The tube has a thickness of 0.04 mm to 0.2 mm, a corrosion resistance to chlorine of more than 100ppm which is more than 50% higher than the corrosion resistance of copper material, a strength about 1 time higher than that of copper material, a ductility similar to that of copper material, and a thermal power higher than that of conventional copper tubes. The tube could be used as a high-efficiency radiating tube in various air conditioners or refrigerating apparatus.

IPC 8 full level

C22C 38/54 (2006.01); **B21B 1/40** (2006.01); **B21D 53/06** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01)

CPC (source: EP)

C21D 6/002 (2013.01); **C21D 8/0278** (2013.01); **C21D 8/0426** (2013.01); **C21D 8/0436** (2013.01); **C21D 8/0478** (2013.01); **C21D 8/10** (2013.01); **C21D 9/08** (2013.01); **C21D 9/46** (2013.01); **C22C 1/11** (2023.01); **C22C 38/004** (2013.01); **C22C 38/42** (2013.01); **C22C 38/44** (2013.01); **C22C 38/46** (2013.01); **C22C 38/48** (2013.01); **C22C 38/50** (2013.01); **C22C 38/52** (2013.01); **C22C 38/54** (2013.01); **B21B 1/40** (2013.01); **B21B 3/02** (2013.01)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)

EP 2210965 A1 20100728; **EP 2210965 A4 20101208**; CN 100485077 C 20090506; CN 101067186 A 20071107; WO 2008151479 A1 20081218

DOCDB simple family (application)

EP 07816391 A 20070920; CN 2007002775 W 20070920; CN 200710074946 A 20070613