

Title (en)
LEADLESS FREE-CUTTING COPPER ALLOY

Title (de)
BLEIFREIE AUTOMATENKUPFERLEGIERUNG

Title (fr)
ALLIAGE DE CUIVRE DE DECOLLETAGE SANS PLOMB

Publication
EP 1045041 A4 20030507 (EN)

Application
EP 98953071 A 19981116

Priority
• JP 9805157 W 19981116
• JP 28859098 A 19981012

Abstract (en)
[origin: EP1559802A1] Lead-free copper alloys with industrially satisfactory machinability comprising 69 to 79 percent, by weight, of copper, 2.0 to 4.0 percent, by weight, of silicon, and the remaining percent, by weight, of zinc. <IMAGE>

IPC 1-7
C22C 9/04; C22F 1/08

IPC 8 full level
C22F 1/00 (2006.01); **C22C 9/04** (2006.01); **C22F 1/08** (2006.01)

CPC (source: EP KR)
C22C 9/04 (2013.01 - EP KR); **C22F 1/08** (2013.01 - EP)

Citation (search report)
• [X] CH 148824 A 19310815 - HIRSCH KUPFER & MESSINGWERKE [DE]
• [X] GB 1443090 A 19760721 - ANACONDA CO
• [X] GB 359570 A 19311019 - HIRSCH KUPFER & MESSINGWERKE
• [X] US 1954003 A 19340410 - EUGEN VADERS
• [X] DE 1558470 A1 19700319 - DIES DR ING KURT
• [X] GB 354966 A 19310820 - HIRSCH KUPFER & MESSINGWERKE
• [X] US 3900349 A 19750819 - COSTAS LOUIS P
• [A] US 2237774 A 19410408 - WOOD MAURICE L
• [A] FR 1031211 A 19530622
• [A] PATENT ABSTRACTS OF JAPAN vol. 015, no. 227 (C - 0839) 10 June 1991 (1991-06-10)
• [A] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 04 31 March 1998 (1998-03-31)
• [A] PATENT ABSTRACTS OF JAPAN vol. 1997, no. 10 31 October 1997 (1997-10-31)
• See references of WO 0022182A1

Cited by
EP1798298A1; EP1918389A4; CN109930025A; EP2236889A1; EP2014964A1; US9217191B2; US11155909B2; WO2007068470A1;
EP1749897A1; EP2290114A1; US6761106B2; US11028466B2; EP1801250A1; EP3985136A1; DE102020127317A1; WO2006039951A1;
WO2004022805A1; US9249907B2; WO2023138974A1; US10538827B2; US10538828B2; US10557185B2; US11131009B2; US11136648B2;
US11313013B2; US11421301B2; US11421302B2; US11434548B2

Designated contracting state (EPC)
BE DE FI FR GB IT SE

DOCDB simple family (publication)
EP 1559802 A1 20050803; EP 1559802 B1 20140115; AU 1054199 A 20000501; AU 744335 B2 20020221; CA 2314144 A1 20000420;
CA 2314144 C 20060822; DE 69832097 D1 20051201; DE 69832097 T2 20060706; DE 69838115 D1 20070830; DE 69838115 T2 20080410;
DE 69839830 D1 20080911; DE 69840585 D1 20090402; EP 1045041 A1 20001018; EP 1045041 A4 20030507; EP 1045041 B1 20051026;
EP 1600515 A2 20051130; EP 1600515 A3 20051214; EP 1600515 B1 20080730; EP 1600515 B8 20081015; EP 1600516 A2 20051130;
EP 1600516 A3 20051214; EP 1600516 B1 20070718; EP 1600517 A2 20051130; EP 1600517 A3 20051214; EP 1600517 B1 20090218;
JP 2000119775 A 20000425; JP 3734372 B2 20060111; KR 100352213 B1 20020912; KR 20010033073 A 20010425; TW 421674 B 20010211;
WO 0022182 A1 20000420

DOCDB simple family (application)
EP 05075421 A 19981116; AU 1054199 A 19981116; CA 2314144 A 19981116; DE 69832097 T 19981116; DE 69838115 T 19981116;
DE 69839830 T 19981116; DE 69840585 T 19981116; EP 05017189 A 19981116; EP 05017190 A 19981116; EP 05017191 A 19981116;
EP 98953071 A 19981116; JP 28859098 A 19981012; JP 9805157 W 19981116; KR 20007006434 A 20000612; TW 88103879 A 19990312