

Title (en)

ACID AND ALKALI RESISTANT NI-CR-MO-CU ALLOYS WITH CRITICAL CONTENTS OF CHROMIUM AND COPPER

Title (de)

SÄURE- UND ALKALIRESISTENTE NI-CR-MO-CU-LEGIERUNGEN MIT KRITISCHEN INHALTEN VON CHROM UND KUPFER

Title (fr)

ALLIAGES NI-CR-MO-CU RÉSISTANTS AUX ACIDES ET ALCALINS DOTÉS DE CONTENUS CRITIQUES DE CHROME ET DE CUIVRE

Publication

EP 2746414 A1 20140625 (EN)

Application

EP 13005102 A 20131025

Priority

- US 201213719369 A 20121219
- US 201313871405 A 20130426
- US 201314055126 A 20131016

Abstract (en)

A nickel-chromium-molybdenum-copper alloy resistant to 70% sulfuric acid at 93 °C and 50% sodium hydroxide at 121 °C for acid and alkali neutralization in the field of waste management; the alloy contains, in weight percent, 27 to 33 chromium, 4.9 to 7.8 molybdenum, 3.1 to 6.0 wt.% copper (when chromium is between 30 and 33 wt.%) or 4.7 to 6.0 wt.% copper (when chromium is between 27 and 29.9 wt.%), up to 3.0 iron, 0.3 to 1.0 manganese, 0.1 to 0.5 aluminum, 0.1 to 0.8 silicon, 0.01 to 0.11 carbon, up to 0.13 nitrogen, up to 0.05 magnesium, up to 0.05 rare earth elements, with a balance of nickel and impurities. Titanium or another MC carbide former can be added to enhance thermal stability of the alloy.

IPC 8 full level

C22C 1/04 (2006.01); **C22C 19/05** (2006.01); **C22F 1/10** (2006.01)

CPC (source: EP)

C22C 1/0433 (2013.01); **C22C 19/053** (2013.01); **C22C 19/055** (2013.01); **C22F 1/10** (2013.01)

Citation (applicant)

- US 6764646 B2 20040720 - CROOK PAUL [US], et al
- US 6280540 B1 20010828 - CROOK PAUL [US]
- US 6623869 B1 20030923 - NISHIYAMA YOSHITAKA [JP], et al
- US 2008279716 A1 20081113 - NISHIYAMA YOSHITAKA [JP], et al
- US 2010034690 A1 20100211 - NISHIYAMA YOSHITAKA [JP], et al
- US 2011236252 A1 20110929 - UEYAMA MASAKI [JP], et al
- US 6740291 B2 20040525 - CROOK PAUL [US]

Citation (search report)

- [IDA] US 6764646 B2 20040720 - CROOK PAUL [US], et al
- [AD] US 6740291 B2 20040525 - CROOK PAUL [US]
- [A] US 4836985 A 19890606 - CULLING JOHN H [US]
- [A] EP 2256220 A1 20101201 - SUMITOMO METAL IND [JP]
- [A] WO 2011034100 A1 20110324 - SUMITOMO METAL IND [JP], et al
- [A] US 3844774 A 19741029 - CULLING J

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

Designated extension state (EPC)

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EP 2746414 A1 20140625; **EP 2746414 B1 20191211**; DK 2746414 T3 20200316; ES 2774401 T3 20200721

DOCDB simple family (application)

EP 13005102 A 20131025; DK 13005102 T 20131025; ES 13005102 T 20131025