

Title (en)
Cold work steel for powder metallurgical production of parts

Title (de)
Kaltarbeitsstahllegierung zur pulvermetallurgischen Herstellung von Teilen

Title (fr)
Acier d'écrouissage pour la fabrication des composants selon la technique de la métallurgie des poudres

Publication
EP 1249512 B1 20060927 (DE)

Application
EP 02450076 A 20020404

Priority
AT 5872001 A 20010411

Abstract (en)
[origin: EP1249512A1] Steel alloy contains carbon (in wt.%) (2.05-2.65), silicon (up to 2), manganese (up to 2), chromium (6.1-9.8), tungsten (0.5-2.4), molybdenum (2.15-4.7), vanadium (7.05-9), niobium (0.25-2.45), cobalt (up to 10), sulfur (up to 0.3), nitrogen (0.04-0.22), nickel (up to 1.5), oxygen (less than 100 ppm) and iron (balance) and non-metallic inclusions with maximum k0 value of 3 according to DIN 50602. <??>The cold work steel alloy contains carbon (in wt.%) (2.05-2.65), silicon (up to 2), manganese (up to 2), chromium (6.1-9.8), tungsten (0.5-2.4), molybdenum (2.15-4.7), vanadium (7.05-9), niobium (0.25-2.45), cobalt (up to 10), sulfur (up to 0.3), nitrogen (0.04-0.22), nickel (up to 1.5), other elements (up to 2.6), oxygen (less than 100 ppm), iron and impurities (remainder) and non-metallic inclusions having k0 value of maximum of 3 according to DIN 50602. The steel alloy is used for forming component with high degree of toughness, hardness and resistance to wear and material fatigue. <??>An Independent claim is included for manufacture of tool or component, by powder metallurgy.

IPC 8 full level
C22C 33/02 (2006.01); **B22F 3/15** (2006.01); **C22C 38/00** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01);
C22C 38/36 (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01); **C22C 38/56** (2006.01); **C22C 38/58** (2006.01);
C22C 38/60 (2006.01); **C21D 7/13** (2006.01)

CPC (source: EP KR US)
C22C 33/02 (2013.01 - EP KR US); **C22C 33/0285** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/22** (2013.01 - EP US);
C22C 38/24 (2013.01 - EP US); **C22C 38/26** (2013.01 - EP US); **C22C 38/36** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US);
C22C 38/46 (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/56** (2013.01 - EP US); **B22F 2009/0896** (2013.01 - EP US);
B22F 2998/10 (2013.01 - EP US); **B22F 2999/00** (2013.01 - EP US); **C21D 7/13** (2013.01 - EP US); **C21D 2241/02** (2013.01 - EP US)

Cited by
DE102005020081A1; CN105384008A; CN100413988C; EP2233596A1; US9993858B2; US9410230B2

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
EP 1249512 A1 20021016; EP 1249512 B1 20060927; AR 034306 A1 20040218; AT 410448 B 20030425; AT A5872001 A 20020915;
BR 0202148 A 20030610; BR 0202148 B1 20101116; CA 2381508 A1 20021011; CA 2381508 C 20061128; CN 1164787 C 20040901;
CN 1382825 A 20021204; DE 50208230 D1 20061109; DK 1249512 T3 20070205; ES 2272662 T3 20070501; HK 1051879 A1 20030822;
KR 100476505 B1 20050317; KR 20020080263 A 20021023; RU 2221069 C1 20040110; TW 589388 B 20040601; UA 76704 C2 20060915;
US 2003068248 A1 20030410; US 6773482 B2 20040810

DOCDB simple family (application)
EP 02450076 A 20020404; AR P020101294 A 20020409; AT 5872001 A 20010411; BR 0202148 A 20020411; CA 2381508 A 20020411;
CN 02105830 A 20020411; DE 50208230 T 20020404; DK 02450076 T 20020404; ES 02450076 T 20020404; HK 03102756 A 20030416;
KR 20020019661 A 20020411; RU 2002109385 A 20020410; TW 91106698 A 20020403; UA 200242895 A 20020410; US 11807802 A 20020409