

Title (en)
Cobalt-free and titanium-free maraging steel

Title (de)
Martensitaushärtender Stahl ohne Kobalt und ohne Titan

Title (fr)
Acier maraging sans cobalt et sans titane

Publication
EP 0935007 A1 19990811 (FR)

Application
EP 99400192 A 19990128

Priority
FR 9801241 A 19980204

Abstract (en)
A maraging steel is free from cobalt and titanium and has specified nickel, molybdenum and aluminum contents. A cobalt-free maraging steel has the composition (by wt.) 14-23% Ni, 4-13% Mo, 1-3.5% Al, ≤ 0.01% C, balance Fe and impurities, the sum of Ni + Mo being 23-27% and the sum of Ni + 2.5 x Mo + 2.3 x Al being ≥ 38%.

Abstract (fr)
Acier maraging sans cobalt dont la composition chimique comprend, en poids : 14 % <= Ni <= 23 % ; 4% <= Mo <= 13 %; 1 % <= Al <= 3,5 % ; C <= 0,01 % ; le reste étant du fer et des impuretés résultant de l'élaboration, la composition chimique satisfaisant, en outre, les conditions suivantes : 23 <= Ni + Mo <= 27 % et Ni + 2,5 x Mo +2,3 x Al >= 38 %.

IPC 1-7
C22C 38/08

IPC 8 full level
C22C 38/00 (2006.01); **C21D 6/00** (2006.01); **C21D 8/02** (2006.01); **C22C 38/06** (2006.01); **C22C 38/08** (2006.01); **C22C 38/12** (2006.01)

CPC (source: EP US)
C21D 6/001 (2013.01 - EP US); **C21D 8/0236** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/08** (2013.01 - EP US);
C22C 38/12 (2013.01 - EP US)

Citation (search report)

- [A] EP 0327042 A1 19890809 - INCO ALLOYS INT [US]
- [A] EP 0051401 A1 19820512 - INCO RES & DEV CENTER INC [US] & US 4443254 A 19840417 - FLOREEN STEPHEN [US]
- [A] EP 0105864 A1 19840418 - VOEST ALPINE AG [AT]
- [A] FR 2127799 A5 19721013 - HITACHI LTD & GB 1355475 A 19740605 - HITACHI LTD
- [A] US 3392065 A 19680709 - BIEBER CLARENCE G, et al
- [A] US 3123506 A 19640303

Cited by
EP1243812A1; US6869376B2

Designated contracting state (EPC)
DE ES FR GB IT

DOCDB simple family (publication)
EP 0935007 A1 19990811; EP 0935007 B1 20021002; DE 69903201 D1 20021107; DE 69903201 T2 20030618; ES 2185295 T3 20030416;
FR 2774396 A1 19990806; FR 2774396 B1 20000310; JP H11264054 A 19990928; US 6136102 A 20001024

DOCDB simple family (application)
EP 99400192 A 19990128; DE 69903201 T 19990128; ES 99400192 T 19990128; FR 9801241 A 19980204; JP 2552799 A 19990202;
US 24349299 A 19990203