

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 March 2003 (13.03.2003)

PCT

(10) International Publication Number
WO 03/020994 A1

(51) International Patent Classification⁷: **C22C 38/44**,
38/52, 38/54

(21) International Application Number: PCT/SE02/01564

(22) International Filing Date:
2 September 2002 (02.09.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0102931-3 2 September 2001 (02.09.2001) SE

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant: SANDVIK AB [SE/SE]; S-811 81 Sandviken (SE).

Published:
— with international search report

(72) Inventors: SUNDSTRÖM, Ann; Barrsättragatan 71, S-811 36 Sandviken (SE). NYSTRÖM, Anna-Lena; Persbogatan 5, S-811 32 Sandviken (SE). KANGAS, Pasi; Karlavägen 37, S-811 36 Sandviken (SE).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(74) Agent: ZIEHE, Gabriele; Sandvik AB, Intellectual Property, S811 81 Sandviken (SE).

(54) Title: DUPLEX STEEL ALLOY

(57) Abstract: The present invention relates to a stainless steel alloy, closer determined a duplex stainless steel alloy with ferritic-austenitic matrix and with high resistance to corrosion in combination with good structural stability and hotworkability, in particular a duplex stainless steel with a content of ferrite of 40-65% and a well balanced composition that imparts material corrosion properties, which makes it is more suitable for use in chloride-containing environments than earlier been considered being possible. The total PRE- or PREW-number exceeds 44 a PRE-number on at least between 46 and 50 in both the austenite phase and the ferrite phase, whereby $PRE = \%Cr + 3,3\%Mo + 16N$ and $PREW = \%Cr + 3,3(\%Mo + 0,5\%W) + 16N$, wherein % considers weight-% and ratio between PRE(W)-value for the austenite phase and PRE(W)-value for the ferrite phase lies between 0,90 and 1,15. These purposes are fulfilled according to the present invention with duplex stainless steel alloys which contain (in weight-%) up to 0,03% C, up to 0,5% Si, 24,0-30,0% Cr, 4,9-10,0% Ni, 3,0-5,0% Mo, 0,28-0,5% N, 0-3,0% Mn, 0-0,0030% B, up to 0,010%, 0-0,03% Al, 0-0,010% Ca, 0-3,0% W, 0-2,0% Cu, 0-3,5% Co, 0-0,3% Ru, balance Fe and inevitable impurities.



WO 03/020994 A1