

21/11/02
2002072718

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 December 2001 (20.12.2001)

PCT

(10) International Publication Number
WO 01/096620 A3

(51) International Patent Classification⁷: C22B 34/24, C23C 14/34

(21) International Application Number: PCT/US01/16438

(22) International Filing Date: 21 May 2001 (21.05.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/206,159 22 May 2000 (22.05.2000) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, 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, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
8 August 2002

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.



162162



ACTION

WO 01/096620 A3

(54) Title: HIGH PURITY NIOBIUM AND PRODUCTS CONTAINING THE SAME, AND METHODS OF MAKING THE SAME

(57) Abstract: High purity niobium metals and alloys containing the same are described. The niobium metal preferably has a purity of at least 99.99 % and more preferably at least 99.999 %. In addition, niobium metal and alloys thereof are described, which either have a grain size of about 150 microns or less, or a texture in which a (100) intensity within any 5 % increment of thickness is less than about 30 random, or an incremental log ratio of (111):(100) intensity of greater than about -4.0, or any combination of these properties. Also described are articles and components made from the niobium metal which include, but are not limited to, sputtering targets, capacitor cans, resistive film layers, wire, and the like. Also disclosed is a process for making the high purity niobium metal which includes the step of reacting a salt-containing niobium and a metal salt along with at least one compound capable of reducing the salt-containing niobium to niobium and in a reaction container. The reaction container or liner in the reaction container and the agitator or liner on the agitator are made from a metal material having the same or higher vapour pressure of melted niobium. The high purity niobium product preferably has a fine and uniform microstructure.