

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C22B 34/24, C23C 14/34	A1	(11) International Publication Number: WO 00/31310 (43) International Publication Date: 2 June 2000 (02.06.00)
(21) International Application Number: PCT/US99/27832 (22) International Filing Date: 24 November 1999 (24.11.99) (30) Priority Data: 09/199,569 25 November 1998 (25.11.98) US (71) Applicant: CABOT CORPORATION [US/US]; 75 State Street, Boston, MA 02109-1806 (US). (72) Inventors: MICHALUK, Christopher, A.; 2306 Cassard Circle, Gilbertsville, PA 19525 (US). MAGUIRE, James, D., Jr.; 1099 Wayfield Drive, Norristown, PA 19403 (US). KAWCHAK, Mark, N.; 160 Hawthorne Lane, Phoenixville, PA 19460 (US). HUBER, Louis, E., Jr.; 2242 West Fairview Street, Allentown, PA 18104 (US). (74) Agent: LANDO, Michelle, B.; Cabot Corporation, 157 Concord Road, P.O. 7001, Billerica, MA 01821-7001 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CZ, DE, DK, DM, 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, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: HIGH PURITY TANTALUM AND PRODUCTS CONTAINING THE SAME LIKE SPUTTER TARGETS (57) Abstract High purity tantalum metals and alloys containing the same are described. The tantalum metal preferably has a purity of at least 99.995 % and more preferably at least 99.999 %. In addition, tantalum metal and alloys thereof are described, which either have a grain size of about 50 microns or less, or a texture in which a (100) intensity within any 5 % increment of thickness is less than about 15 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 tantalum 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 metal which includes the step of reacting a salt-containing tantalum with at least one compound capable of reducing this salt to tantalum powder and a second salt 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 vapor pressure of melted tantalum. The high purity tantalum preferably has a fine and uniform microstructure. *162162* *G00002*		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		