

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

200102411-6

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : B24D 3/06, B28D 5/02	A1	(11) International Publication Number: WO 00/40371 (43) International Publication Date: 13 July 2000 (13.07.00)
(21) International Application Number: PCT/US99/29024 (22) International Filing Date: 8 December 1999 (08.12.99) (30) Priority Data: 09/227,028 7 January 1999 (07.01.99) US (71) Applicant: NORTON COMPANY [US/US]; 1 New Bond Street, Box Number 15138, Worcester, MA 01615-0138 (US). (72) Inventors: ANDREWS, Richard, M.; 56 Upton Road, Westborough, MA 01581 (US). BULJAN, Sergej-Tomislav; 23 Washington Drive, Acton, MA 01720 (US). RAMANATH, Srinivasan; 28 Avery Road, Holden, MA 01520 (US). GEARY, Earl, G.; 12 Waveney Road, Framingham, MA 01701 (US). (74) Agents: PORTER, Mary, E. et al.; Saint-Gobain Corporation, 1 New Bond Street, Box Number 15138, Worcester, MA 01615-0138 (US).		(81) Designated States: AU, BR, CA, CN, CZ, HU, ID, IL, IN, JP, KR, MX, NZ, PL, SG, SK, ZA, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>
(54) Title: SUPERABRASIVE WHEEL WITH ACTIVE BOND		
(57) Abstract A straight, thin, monolithic abrasive wheel formed of hard and rigid abrasive grains and a sintered bond including a metal component and an active metal component exhibits superior stiffness. The metal component can be selected from among many sinterable metal compositions. The active metal is a metal capable of reacting to form a bond with the abrasive grains at sintering conditions and is present in an amount effective to integrate the grains and sintered bond into a grain-reinforced composite. A diamond abrasive, copper/tin/titanium sintered bond abrasive wheel is preferred. Such a wheel is useful for abrading operations in the electronics industry, such as cutting silicon wafers and alumina-titanium carbide pucks. The stiffness of the novel abrasive wheels is higher than conventional straight monolithic wheels and therefore improved cutting precision and less chipping can be attained without increase of wheel thickness and concomitant increased kerf loss.		