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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
21 June 2001 (21.06.2001)

PCT

(10) International Publication Number
WO 01/44396 A1

(51) International Patent Classification[7]: C09G 1/02

(21) International Application Number: PCT/US00/33527

(22) International Filing Date:
11 December 2000 (11.12.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/170,612 14 December 1999 (14.12.1999) US
60/171,553 22 December 1999 (22.12.1999) US

(71) Applicant: **RODEL HOLDINGS, INC.** [US/US]; 1105 North Market Street, Suite 1300, Wilmington, DE 19899 (US).

(72) Inventors: **SACHAN, Vikas**; 121 Brook Run, Hockessin, DE 19707 (US). **REINHARDT, Heinz, F.**; 19 McCarthy Road, Chadds Ford, PA 19317 (US). **THOMAS, Terence, M.**; 209 Cullen Way, Newark, DE 19711 (US).

(74) Agent: **BENSON, Kenneth, A.**; Rodel Holdings, Inc., 1105 North Market Street, Suite 1300, Wilmington, DE 19899 (US).

(81) Designated States *(national)*: JP, KR, SG.

(84) Designated States *(regional)*: European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

Published:
— *With international search report.*

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.

WO 01/44396 A1

(54) Title: POLISHING COMPOSITIONS FOR NOBLE METALS

(57) Abstract: The polishing composition of this invention is useful for chemical mechanical polishing of substrates containing noble metals such as platinum and contains sulfur-containing compounds at about 0.1 % to 50 % by weight of the polishing composition, abrasive particles at about 0.5 % to about 55 % by weight of the polishing composition and water-soluble organic additives up to about 10 % by weight of the polishing composition. The abrasive particles are selected from the group consisting of alumina, ceria, silica, diamond, germania, zirconia, silicon carbide, boron nitride, boron carbide or mixtures thereof. The organic additives improve dispersion of the abrasive particles and also enhance metal removal rates and selectivity for metal removal by stabilizing the pH of the polishing composition and suppressing the dielectric removal rate.