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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 May 2009 (22.05.2009)

PCT

(10) International Publication Number
WO 2009/064336 A1

(51) International Patent Classification:
B44C 1/22 (2006.01)

(21) International Application Number:
PCT/US2008/011268

(22) International Filing Date:
29 September 2008 (29.09.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/996,429 16 November 2007 (16.11.2007) US

(71) Applicant *(for all designated States except US)*: **EKC TECHNOLOGY, INC.** [US/US]; 2520 Barrington Court, Hayward, CA 94545-1163 (US).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: **CUI, Hua** [US/US]; 3746 Kenmore Court, Castro Valley, CA 94546 (US).

(74) Agents: **SULLIVAN, Mark, J.** et al.; Morgan Lewis & Bockius LLP, 1111 Pennsylvania, NW, Washington, DC 20004 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: COMPOSITIONS FOR REMOVAL OF METAL HARD MASK ETCHING RESIDUES FROM A SEMICONDUCTOR SUBSTRATE

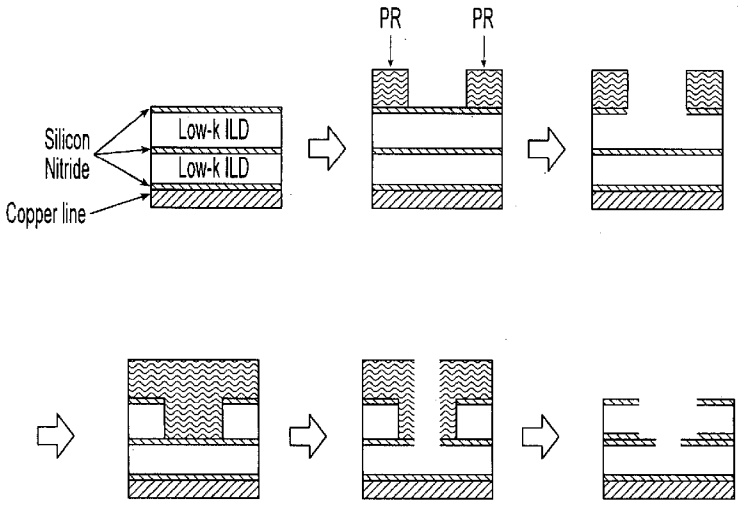

Fig. 1

(57) Abstract: Compositions for removing and cleaning resist, etching residues, planarization residues, metal fluorides and/or metal oxides from a substrate are provided, the composition including a metal ion-free fluoride compound and water. The resist, etching residues, planarization residues, metal fluorides and/or metal oxides are generated during one or more patterning processes during which a metal hard mask is used.

WO 2009/064336 A1

Published:
— *with international search report*