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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 July 2010 (29.07.2010)

PCT

(10) International Publication Number
WO 2010/084398 A2

(51) International Patent Classification:
A61K 8/04 (2006.01)

(21) International Application Number:
PCT/IB2010/000084

(22) International Filing Date:
19 January 2010 (19.01.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/275,689 24 January 2009 (24.01.2009) US
12/648,673 29 December 2009 (29.12.2009) US

(71) Applicant *(for all designated States except US)*: **J.M. HUBER CORPORATION** [US/US]; 1000 Parkwood Circle, Suite 1000, Atlanta, GA 30399 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **GALLIS, Karl, W.** [US/US]; 722 Concord Point Drive, Perryville, MD 21903 (US). **SWAZEY, John, M.** [US/US]; 13183 Sunstone Pointe, San Diego, CA 92130 (US). **PASAY, Cozette, Ashly, B.** [US/US]; 5420 Repecho Drive, Apt. S-107, San Diego, CA 92124 (US). **DARSILLO, Michael, S.** [US/US]; 302 Norwich Lane, Landenburg, PA 19350 (US). **ZAPF, Jason, Thomas** [US/US]; 1206 Cheshire Lane, Bel Air, MD 21014 (US).

(74) Agent: **OLIVE, Bentley, J.**; Law Offices of Bentley J. Olive, PLLC, 130 Edinburgh South Drive, Suite 107, Cary, NC 27511 (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, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

WO 2010/084398 A2

(54) **Title**: MOUTH RINSE COMPOSITIONS INCLUDING CHEMICALLY MODIFIED SILICA OR SILICATE MATERIALS FOR SUSTAINED DELIVERY TO TOOTH SURFACES

(57) **Abstract**: Novel mouth rinse (i.e., mouthwash) compositions that permit delivery of silica or silicate materials to the surface of teeth through common mouth rinsing procedures are provided. Such compositions must exhibit proper suspension of the silica or silicate materials (in particulate form) to prevent settling during storage while simultaneously providing proper mouth rinsing properties. Such silica or silicate materials may themselves exhibit any number of therapeutic or aesthetic benefits as long as such materials are easily transferred through mouth rinsing and exhibit proper affinity for deposit on target teeth upon contact therewith. Such silica or silicate materials should exhibit, in one embodiment, certain ionic charge levels as well as sufficiently small particle sizes to permit effective static attraction and eventual accumulation on target tooth surfaces. Methods of utilizing such mouthwashes for breath freshening and/or cleaning, as well as silica or silicate material tooth accumulation, are encompassed within this invention as well.