

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
3 August 2006 (03.08.2006)

PCT

(10) International Publication Number
WO 2006/081512 A2

(51) International Patent Classification:
B32B 9/04 (2006.01) **B05D 3/02** (2006.01)

(21) International Application Number:
PCT/US2006/003120

(22) International Filing Date: 27 January 2006 (27.01.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/648,327 27 January 2005 (27.01.2005) US

(71) Applicant (for all designated States except US): **HYBRID PLASTICS, INC.** [US/US]; 55 W.L. Runnels Industrial Drive, Hattiesburg, Mississippi 39401 (US).

(72) Inventors: **LICHTENHAN, Joseph, D.**; 31085 Via Sonora, San Juan Capistrano, CA 92675 (US). **SCHWAB, Joseph, J.**; 16352 Bradbury, Huntington Beach, CA 92647 (US). **AN, Yi-Zhong**; 12 Walnut Creek, Irvine, CA 92602 (US). **REINERTH, William**; 13471 Lynwood Place, Garden Grove, CA 92843 (US).

(74) Agent: **JAFFER, David, H.**; PILLSBURY WINTHROP SHAW PITTMAN LLP, INTELLECTUAL PROPERTY GROUP, P.O. Box 10500, McLean, VA 22102 (US).

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

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.

(54) Title: SURFACE MODIFICATION WITH POLYHEDRAL OLIGOMERIC SILSESQUOXANES SILANOLS

(57) Abstract: Nanoreinforced coatings with improved hydrophobicity, thermal stability, hardness, and durability have been developed from polyhedral oligomeric silsesquioxane (POSS) reagents and resins. The nanoscopic dimensions and hybrid (organic/inorganic) composition of POSS reagents are particularly useful for coating fillers derived from minerals, metals, glasses, and polymeric materials.



WO 2006/081512 A2