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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
2 October 2003 (02.10.2003)

PCT

(10) International Publication Number
WO 03/080357 A1

(51) International Patent Classification[7]: B41M 5/00, C09D 7/12

(21) International Application Number: PCT/US03/08364

(22) International Filing Date: 19 March 2003 (19.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/365,617 19 March 2002 (19.03.2002) US

(71) Applicant *(for all designated States except US)*: **W.R. GRACE & CO.-CONN.** [US/US]; 7500 Grace Drive, Columbia, MD 21044 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **FRUGE, Daniel, Ray** [US/US]; 2413 Brickton Road, Wilmington, DE 19803 (US). **MICHOS, Demetrius** [GR/US]; 13649 Highland Road, Clarksville, MD 21029 (US).

(74) Agent: **BUNCH, William, D.**; W. R. GRACE & CO.-CONN., 7500 Grace Drive, Columbia, MD 21044 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designation US*

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 03/080357 A1

(54) Title: COATING COMPOSITION COMPRISING COLLOIDAL SILICA AND GLOSSY INK JET RECORDING SHEETS PREPARED THEREFROM

(57) Abstract: A coating composition comprising low sodium containing colloidal silicas and ink jet recording sheets prepared from such coatings are described. The coating comprises binder and colloidal silica preferably having an average particle size in the range of about 1 to 300 nanometers and which has a solids to alkali metal ratio of at least the sum of AW(-0.013SSA+9), AW being the atomic weight of alkali metal present in the colloidal silica and SSA being the specific surface area of the silica. It has been discovered that if the alkali metal, *e.g.*, sodium, content of colloidal silica is reduced, coatings prepared from such colloidal silica and applied to conventional ink jet recording sheet supports provide a specular gloss of at least 30 at 60 °C., even at a relatively high silica solids to binder solids ratio of 1:1 or greater.