

27/09/02  
200 2058543

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

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
11 October 2001 (11.10.2001)

PCT

(10) International Publication Number  
**WO 01/74712 A1**

- (51) International Patent Classification<sup>7</sup>: **C01B 33/12**, 33/142, 33/143, C04B 14/04, 16/02, 18/18, 18/24
- (74) Agent: **WEILER, James, F.**; Suite 1560, 1 Riverway, Houston, TX 77056 (US).
- (21) International Application Number: PCT/US01/10171
- (22) International Filing Date: 30 March 2001 (30.03.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
09/540,568 31 March 2000 (31.03.2000) US
- (71) Applicants: **AGRITEC, INC.** [US/US]; 1301 McKinney, Houston, TX 77010 (US). **OCCIDENTAL CHEMICAL CORPORATION** [US/US]; 5005 LBJ Freeway, Dallas, TX (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, 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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- (72) Inventors: **STEPHENS, Douglas, K.**; 1116 Deats Road, Dickinson, TX 77539 (US). **WELLEN, Clyde, W.**; 2121 Kirby Drive, #79, Houston, TX 77019 (US). **SMITH, Jeffrey, B.**; 5516 Ashcreek Lane, Plano, TX 75093 (US). **KUBIAK, Kenneth, F.**; 16819 Colegrove Drive, Dallas, TX 75248 (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.*



\*162162\*



\*ACTION\*

WO 01/74712 A1

(54) Title: PRECIPITATED SILICAS, SILICA GELS WITH AND FREE OF DEPOSITED CARBON FROM CAUSTIC BIOMASS ASH SOLUTIONS AND PROCESSES

(57) Abstract: Disclosed are amorphous precipitated silicas, silica gels, and amorphous carbons derived from biomass and methods of producing them with and without adhered or deposited amorphous carbons produced by acidifying a caustic silicate solution produced by caustic digestion of biomass ash containing silica with and without activated carbon, the ash being obtained from thermal pyrolysis of the biomass, the acidifying effective to produce a slurry of the precipitated silica and silica gels with and without adhered or deposited amorphous carbon, and separated from the slurry the precipitated silicas and silica gels with and without the adhered or deposited amorphous carbons. The properties of the precipitated silica with adhered or deposited carbon being within the range as utilized in rubber compositions thereby avoiding the blending of silica and carbon components for such use. The precipitated silicas and silica gels without adhered or deposited carbon having metal contaminants present in low concentrations which when used in formulation of chemical-mechanical-planerization slurries used in polishing silicon wafers in the manufacture of computer chips and other electronic devices do not contaminate the wafer and final chip product and the other electronic devices.