



(51) International Patent Classification:

C08K 3/34 (2006.01) *C08J 9/28* (2006.01)
C04B 38/00 (2006.01) *C08L 5/00* (2006.01)

(21) International Application Number:

PCT/US2012/040063

(22) International Filing Date:

31 May 2012 (31.05.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/492,772 2 June 2011 (02.06.2011) US

(71) Applicant (for all designated States except US): **MIL-LIKEN & COMPANY** [US/US]; 920 Milliken Road, M-495, Spartanburg, South Carolina 29303 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LIAO, Qi** [CN/US]; 634 Sweet Juliet Way, Greer, South Carolina 29650 (US). **SCRIVENS, Walter A.** [US/US]; 147 Morninglake Drive, Moore, South Carolina 29369 (US). **WILSON, Philip T.** [US/US]; 160 Jenna Grove Lane, Duncan, South Carolina 29334 (US). **DOTSON, Darin L.** [US/US]; 129 Leinster Run, Moore, South Carolina 29369 (US). **ZHOU, Hao** [CN/US]; 4438 Huntington Ridge Cir., Newburgh, Indiana 47630 (US).

(74) Agent: **LANNING, Robert M.**; 920 Milliken Road, M-495, Spartanburg, South Carolina 29303 (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, QA, RO, RS, RU, RW, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, 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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:

14 March 2013

(54) Title: POROUS, LOW DENSITY NANOCCLAY COMPOSITE

(57) Abstract: Disclosed are porous, low density nanoclay composites that exhibit highly homogeneous microcellular morphology and methods for forming the nanocomposites. The nanocomposites include a three-dimensional matrix having a non-lamellar, generally isotropic cellular structure with little or no macroscopic pores. The nanocomposites also include a gel that may be a noncovalently cross-linked, thermoreversible gel. The nanocomposites may include a binder and/or fibrous reinforcement materials. The nanocomposites may be formed according to a freeze-drying process in which ice crystal growth is controlled to prevent formation of macroscopic pores in the composite materials.



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/040063

A. CLASSIFICATION OF SUBJECT MATTER INV. C08K3/34 C04B38/00 C08J9/28 C08L5/00 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) C08K C04B C08J C08L		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 195 04 899 A1 (NAT INST RES INORGANIC MAT [JP]) 28 March 1996 (1996-03-28) examples 1-9 -----	1-28
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 16 November 2012		Date of mailing of the international search report 26/11/2012
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Siemens, Thomas

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/040063

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