

(43) International Publication Date
20 September 2012 (20.09.2012)

(51) International Patent Classification:

B60C 1/00 (2006.01) *C08L 23/22* (2006.01)
C08J 5/18 (2006.01) *C08L 23/28* (2006.01)
C08L 21/00 (2006.01)

(21) International Application Number:

PCT/US2011/063546

(22) International Filing Date:

6 December 2011 (06.12.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

13/046,177 11 March 2011 (11.03.2011) US

(71) **Applicant** (for all designated States except US): **EXXON-MOBIL CHEMICAL PATENTS INC.** [US/US]; A Corporation of The State Delaware, 5200 Bayway Drive, Baytown, TX 77520 (US).

(72) **Inventors; and**

(75) **Inventors/Applicants** (for US only): **CHENG, Jianya, J.** [US/US]; 5015 Scenic Woods Trail, Kingwood, TX 77345 (US). **BHADANE, Prashant, A.** [CA/CA]; 2620 Ken Avenue #441, Montreal H3S 1M7 (CA). **FAVIS, Basil, D.** [CA/CA]; 125 Meaney Street, Kirkland, Quebec H9J 3B9 (CA). **KUMOR, Dennis** [US/US]; 824 Bridlewood Drive, Copley, OH 44321 (US). **ELLUL, Maria, D.** [US/US]; 3230 N. Dover Road, Silver Lake Village, OH 44224 (US). **MANDERS, Peter, W.** [GB/US]; 41 York Drive, Hudson, OH 44236 (US). **SHANNON, Porter, C.** [US/US]; 1129 Carriage Court, Seabrook, TX 77586 (US). **ROUCK-**

HOUT, Dirk, F. [BE/BE]; Grotesteenweg 424 A, B-3350 Linter (BE).

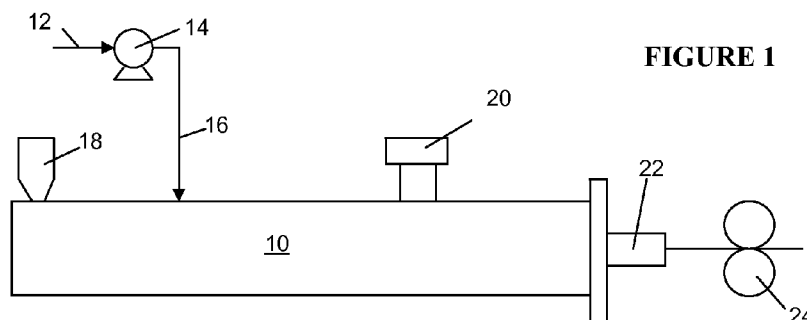
(74) **Agents:** **KRAWCZYK, Nancy T.** et al.; Exxonmobil Chemical Company, P.O.Box 2149, Baytown, TX 77522-2149 (US).

(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, MD, 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))

(54) **Title:** DYNAMICALLY VULCANIZED THERMOPLASTIC ELASTOMER FILM**FIGURE 1**

(57) **Abstract:** A dynamically vulcanized alloy containing an elastomer and a thermoplastic resin is prepared by a process wherein supercritical fluid is injected into the thermoplastic elastomeric material as the material is mixed in an extruder. The material is mixed under conditions such that the thermoplastic elastomeric material is dynamically vulcanized wherein the elastomer forms a discontinuous dispersed of small particles in a continuous phase of the thermoplastic resin. The DVA material may then be directly formed into film or sheets by the use of at least one set of rolls located adjacent to the extruder outlet.