

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 January 2022 (06.01.2022)



(10) International Publication Number
WO 2022/005532 A1

(51) International Patent Classification:

C08J 5/18 (2006.01) B29C 41/04 (2006.01)

C08L 23/08 (2006.01)

(21) International Application Number:

PCT/US2021/016809

(22) International Filing Date:

05 February 2021 (05.02.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/046,396 30 June 2020 (30.06.2020) US

(71) Applicant: **DOW GLOBAL TECHNOLOGIES LLC**
[US/US]; 2211 H.H. Dow Way, Midland, Michigan 48674
(US).

(72) Inventors; and

(71) Applicants: **LUGO, Elva L.** [CO/US]; c/o The Dow
Chemical Company, 230 Abner Jackson Parkway, Lake
Jackson, Texas 77566 (US). **BISWAS, Sanjib** [IN/US]; c/
o The Dow Chemical Company, 230 Abner Jackson Park-
way, Lake Jackson, Texas 77566 (US). **COOPER, Rus-
sell** [US/US]; c/o The Dow Chemical Company, 2301 North

Brazosport Boulevard, Freeport, Texas 77541 (US). **PA-
TEL, Rajen** [US/US]; c/o The Dow Chemical Company,
2301 North Brazosport Boulevard, Freeport, Texas 77541
(US). **MARTIN, Peter S.** [US/US]; 13831 Round Oak
Court, Houston, Texas 77059 (US). **WHITED, Stephanie
M.** [US/US]; c/o The Dow Chemical Company, 437 Mac-
Corkle Avenue, South West, South Charleston, West Vir-
ginia 25303 (US).

(74) Agent: **MONTELEONE, Allisyn E.** et al.; Dinsmore &
Shohl LLP, One South Main Street, Dayton, Ohio 45402
(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, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN,
KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO,
NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW,
SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(54) Title: POLYETHYLENE COMPOSITIONS

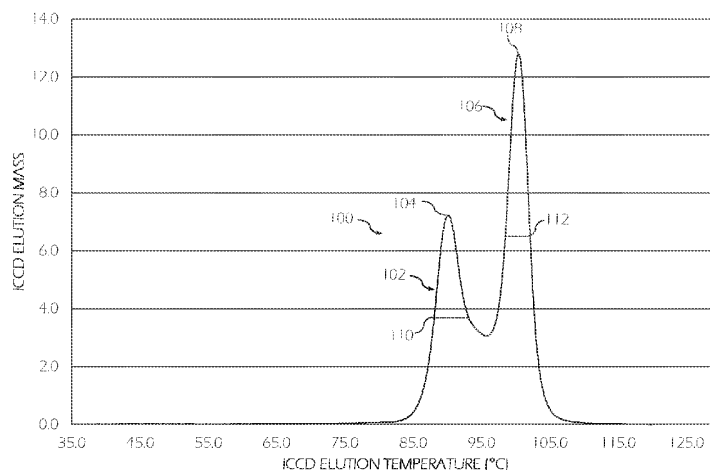


FIG. 1

(57) Abstract: Embodiments of polyethylene compositions and articles comprising polyethylene compositions are disclosed. The poly-
ethylene compositions may include a first polyethylene fraction area defined by an area in the elution profile in a temperature range
of 70°C to 97°C via improved comonomer composition distribution (iCCD) analysis method; a first peak in the temperature range of
70°C to 97°C in the elution profile; a second polyethylene fraction area defined by an area in the elution profile in a temperature range
of 97°C to 110°C; and a second peak in the temperature range of 97°C to 110°C. The polyethylene composition may have a density
of 0.935 g/cm³ to 0.955 g/cm³ and a melt index (I₂) of 1.0 g/10 minutes to 10.0 g/10 minutes. A ratio of the first polyethylene fraction
area to the second polyethylene fraction area may be less than 2.0.

[Continued on next page]

(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, ST, 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, KM, ML, MR, NE, SN, TD, TG).

Published:

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