

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
24 August 2023 (24.08.2023)



(10) International Publication Number
WO 2023/155081 A1

(51) International Patent Classification:

B32B 7/12 (2006.01) *B32B 27/36* (2006.01)
B32B 27/08 (2006.01) *C08J 5/18* (2006.01)
B32B 27/30 (2006.01) *C08L 23/04* (2006.01)
B32B 27/32 (2006.01)

(21) International Application Number:

PCT/CN2022/076552

(22) International Filing Date:

17 February 2022 (17.02.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicants: **BOREALIS AG** [AT/AT]; Trabrennsstrasse 6-8, 1220 Vienna (AT). **ABU DHABI POLYMERS CO. LTD (BOROUGE) L.L.C.** [AE/AE]; P.O. Box 6925, Sheikh Khalifa Energy Complex, Corniche Road, Abu Dhabi (AE).

(72) Inventors: **DUAN, Xinrong**; Room 502, No. 11, Zone 753, Gumei West Road, Minhang District, Shanghai 201100 (CN). **GITSAS, Antonis**; Borealis Polyolefine GmbH, St.-Peter-Strasse 25, 4021 Linz (AT). **BERTHELIER, Anthony**; Borealis France Services S.A.S., Tour Ciel 20 ter rue de Bezons, 92400 Courbevoie (FR). **SEMAAN, Chantal**; Borealis Quimicaespaña SA, Rambla Catalunya, 87 Despacho 1-E, 08008 Barcelona (ES). **BURYAK, Andrey**; Borealis Polyolefine GmbH, St.-Peter-Strasse 25, 4021 Linz (AT). **DAS, Subrata Kumar**; Borouge Pte Ltd, Abu Dhabi Branch, Sheikh P.O. Box 6925, Khalifa Energy Complex, Corniche Road, Abu Dhabi (AE) (AE). **SINGH, Raghvendra**; Borouge Pte Ltd, Abu Dhabi Branch, Sheikh P.O. Box 6925, Khalifa Energy Complex, Corniche Road, Abu Dhabi (AE) (AE). **AL TALAFHA, Mohammad**; Borouge Pte Ltd, Abu Dhabi Branch, Sheikh P.O. Box 6925, Khalifa Energy Complex, Corniche Road, Abu Dhabi (AE) (AE). **MALMOROS, Peter**; Borouge Pte. Ltd., 1 George Street, #18-01, 049145 (SG).

(74) Agent: **SINO-CREATIVITY INTELLECTUAL PROPERTY LAW FIRM**; Room 25A3-1, East Wing, Hanwei

Plaza, No.7 Guanghua Road, Chaoyang District, Beijing 100020 (CN).

(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, JM, 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.

(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))

(54) Title: FLEXIBLE LAMINATES WITH SUPERIOR SEALING PERFORMANCE

(57) Abstract: The invention relates to a laminated film comprising a polyethylene sealant film comprising at least an outer layer O, an inner layer I and a core layer C, the core layer C being present between the outer layer O and the inner layer I, wherein the inner layer I is made of an inner layer composition comprising from 75 to 95 wt. % of a component AI that is a linear low density ethylene polymer having a density of from 915 to 925 kg/m³ and a melt flow rate (MFR₂) of from 0.5 to 3.0 g/10 min, determined according to ISO 1133, the wt. % being based on the total weight of the inner layer composition; and a substrate film laminated to the polyethylene sealant film, wherein the substrate film comprises a polyester polymer, selected from the group consisting of polyethylene terephthalate, polybutylene terephthalate and polytrimethylene terephthalate, and mixtures thereof; wherein the seal initiation temperature SIT (5 N) of the laminated film is less than 100 °C determined at the inner layer of the polyethylene sealant film according to ASTM F2029, ASTM F88. The invention further relates to an article comprising the laminated film and to the use of laminated film for packaging of an article. Moreover, the invention relates to the use of the polyethylene sealant film for improving the sealing performance of a substrate film comprising a polyester polymer.

WO 2023/155081 A1