

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
08 February 2024 (08.02.2024)



(10) International Publication Number
WO 2024/030834 A1

(51) International Patent Classification:

B29C 48/00 (2019.01) *B32B 27/08* (2006.01)
B29C 48/92 (2019.01) *B32B 27/36* (2006.01)
C08J 5/18 (2006.01) *B29C 48/08* (2019.01)
B29C 55/28 (2006.01) *B29C 48/21* (2019.01)

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, ME, 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).

(21) International Application Number:

PCT/US2023/071248

(22) International Filing Date:

28 July 2023 (28.07.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/369,997 01 August 2022 (01.08.2022) US

(71) Applicant: **DANIMER IP CO, LLC** [US/US]; 140 Industrial Boulevard, Bainbridge, GA 39817 (US).

(72) Inventors: **DIRENZO, Jerri**; 13 Devon Court, Wilmington, DE 19810 (US). **JOHNSON, Adam**; 2042 Ashton Way, Bainbridge, GA 39819 (US). **SAMANTA, Satyabrata**; 2226 Wyndham Way Dr., Bainbridge, GA 39819 (US). **EMERY, Laura**; W211 Deering Lane, Kaukauna, WI 54130 (US). **RODGERS, Brad**; 4214 Wellesley Ave, Frisco, TX 75034 (US).

(74) Agent: **LAROSE, David, E.** et al.; Luedeka Neely Group, P.C., P.O. Box 1871, Knoxville, TN 37901 (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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ,

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))



WO 2024/030834 A1

(54) Title: **BIAXIALLY-ORIENTED BIODEGRADABLE FILM**

(57) Abstract: A biaxially-oriented industrial or home compostable film web having at least 3 co-extruded layers selected from: a skin film layer, a sealant film layer, and a combination of a sealant film layer and a skin film layer, wherein each of the sealant film layer and skin film layer includes a blend of from 0 to about 80 wt.% polyhydroxyalkanoate (PHA) and from about 20 to about 100 weight percent polylactic acid (PLA), and, optionally, minor amounts of other biopolymers, other polymers, nucleating agents, chain extenders, fatty amides, and fillers; and a core film layer including a blend of from about 30 to about 80 wt.% polyhydroxyalkanoate (PHA), from about 20 to about 40 wt.% polylactic acid (PLA), and, optionally, minor amounts of other biopolymers, other polymers, nucleating agents, chain extenders, fatty amides, and fillers.