

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
05 November 2020 (05.11.2020)



(10) International Publication Number
WO 2020/222018 A1

(51) International Patent Classification:

C08G 64/34 (2006.01) C08G 64/18 (2006.01)
C08G 18/44 (2006.01) C08G 65/26 (2006.01)
C08G 64/02 (2006.01)

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).

(21) International Application Number:

PCT/GB2020/051082

(22) International Filing Date:

01 May 2020 (01.05.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

1906210.8 02 May 2019 (02.05.2019) GB

(71) Applicant: **ECONIC TECHNOLOGIES LTD** [GB/GB];
Block 19S, Alderley Park, Macclesfield Cheshire SK10 4TG
(GB).

(72) Inventors: **LEELAND, James**; Econic Technologies Ltd,
Block 19S, Alderley Park, Macclesfield Cheshire SK10
4TG (GB). **KABIR, Rakibul**; Econic Technologies Limit-
ed, Block 19S, Alderley Park, Macclesfield Cheshire SK10
4TG (GB). **RILEY, Kerry**; Econic Technologies Limit-
ed, Block 19S, Alderley Park, Macclesfield Cheshire SK10
4TG (GB). **KEMBER, Michael**; Econic Technologies Ltd,
Block 19S, Alderley Park, Macclesfield Cheshire SK10
4TG (GB).

(74) Agent: **APPLEYARD LEES IP LLP**; 15 Clare Road, Hal-
ifax Yorkshire HX1 2HY (GB).

(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, 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,

(54) Title: A POLYOL BLOCK COPOLYMER, COMPOSITIONS AND PROCESSES THEREFOR

(57) Abstract: The present invention relates to a polyol block copolymer comprising a polycarbonate block, A (-A'-Z'-Z-(Z'-A')_n-), and polyethercarbonate blocks, B. The polyol block copolymer has the polyblock structure: B-A'-Z'-Z-(Z'-A'-B)_n wherein n= t-1 and wherein t= the number of terminal OH group residues on the block A; and wherein each A' is independently a polycarbonate chain having at least 70% carbonate linkages, and wherein each B is independently a polyethercarbonate chain having 50- 99% ether linkages and at least 1% carbonate linkages; and wherein Z'-Z-(Z')_n is a starter residue. The invention further relates to the process of producing a polyol block copolymer from a two step process carried out in two reactors, and products and compositions incorporating such copolymers.



WO 2020/222018 A1