

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
29 June 2023 (29.06.2023)



(10) International Publication Number
WO 2023/121913 A1

(51) International Patent Classification:
C08G 65/26 (2006.01)

(21) International Application Number:
PCT/US2022/052641

(22) International Filing Date:
13 December 2022 (13.12.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/291,969 21 December 2021 (21.12.2021) US

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

(72) Inventors: **MARTINEZ, Julibeth M.**; 230 Abner Jackson
Parkway, Lake Jackson, Texas 77566 (US). **RAGHURA-**
MAN, Arjun; 230 Abner Jackson Parkway, Lake Jackson,
Texas 77566 (US). **VILLA, Carlos M.**; 230 Abner Jack-
son Parkway, Lake Jackson, Texas 77566 (US). **ARORA,**
Sukaran Singh; 230 Abner Jackson Parkway, Lake Jack-
son, Texas 77566 (US). **MAJUMDER, Ankita**; 230 Abner
Jackson Parkway, Lake Jackson, Texas 77566 (US).

(74) Agent: **COHN, Gary C.**; 135 Beaconsfield Road, #2,
Brookline, Massachusetts 02445 (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, 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, 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, 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).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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 2023/121913 A1

(54) Title: SEMI-BATCH ALKYLENE OXIDE POLYMERIZATION PROCESS USING A LEWIS ACID CATALYST

(57) Abstract: Polyether polyols are prepared by polymerizing one or more alkylene oxides in the presence of a Lewis acid polymerization catalyst. The reaction is performed by forming a starting reaction mixture containing a starter and catalyst. The alkylene oxide and more catalyst are then added simultaneously, continuously and separately under reaction conditions that include a temperature of at least 75°C.