

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 March 2002 (07.03.2002)

PCT

(10) International Publication Number
WO 02/18472 A3

- (51) International Patent Classification⁷: C08G 63/78, 63/91, 63/183, 63/80
- (21) International Application Number: PCT/US01/26579
- (22) International Filing Date: 24 August 2001 (24.08.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/228.491 28 August 2000 (28.08.2000) US
- (71) Applicant (for all designated States except US): **THE DOW CHEMICAL COMPANY** [US/US]; 2030 Dow Center, Abbott Road, Midland, MI 48674 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WIEGNER, Jens-Peter** [DE/DE]; Mendelejewstrasse 3, 06130 Halle (DE). **VOERCKEL, Volkmar** [DE/DE]; Weisse Mauer 22, 06217 Merseburg (DE). **MUNJAL, Sarat** [US/US]; 106 Thyme Trail, Lake Jackson, TX 77566 (US).
- (74) Agent: **SIMS, Norman, L.**; The Dow Chemical Company, Intellectual Property, P.O. Box 1967, Midland, MI 48641-1967 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- (88) Date of publication of the international search report:
6 June 2002
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCEDURE FOR THE MANUFACTURE OF POLY-(ETHYLENE TEREPHTHALATE)

(57) Abstract: The invention concerns a new procedure for the manufacture of poly-(ethylene terephthalate) (PET) by raising the molecular in the liquid phase to 68,000 to 86,000 g/mol, during the step of liquid phase polycondensation and subsequently pelletizing the amorphous product, followed by a crystallization over a period of 15-60 min, at temperatures of 160-185 °C, in air, whereby the pellet temperature reach 25-180 °C. In a subsequent procedural step the pellets remain for 2-10 h at temperatures of 120 °C to 220 °C ("preheater") in an air stream, followed by treating the polyester resin thus obtained with polyols or other blocking agents at concentrations of 100 and 10,000 ppm, relative to the polyester resin.



WO 02/18472 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/26579

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C08G63/78 C08G63/91 C08G63/183 C08G63/80

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C08G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 132 707 A (BORMAN WILLEM F H) 2 January 1979 (1979-01-02) ---	
A	US 3 453 240 A (PLASTER BERNARD J ET AL) 1 July 1969 (1969-07-01) ---	
A	US 4 161 579 A (BERARDINELLI FRANK M ET AL) 17 July 1979 (1979-07-17) ---	
A	US 4 374 975 A (DUH BEN) 22 February 1983 (1983-02-22) -----	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

6 March 2002

Date of mailing of the international search report

21/03/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
 Fax: (+31-70) 340-3016

Authorized officer

Decocker, L

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/26579

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4132707	A	02-01-1979	AU 516366 B2	28-05-1981
			AU 3126877 A	14-06-1979
			CA 1107000 A1	11-08-1981
			DE 2753998 A1	15-06-1978
			FR 2372854 A1	30-06-1978
			GB 1568756 A	04-06-1980
			JP 53094596 A	18-08-1978
			MX 146213 A	26-05-1982
US 3453240	A	01-07-1969	DE 1570689 A1	22-01-1970
			FR 1446811 A	22-07-1966
			GB 1101900 A	31-01-1968
US 4161579	A	17-07-1979	BR 7902195 A	04-12-1979
			DE 2913215 A1	11-10-1979
			FR 2435490 A1	04-04-1980
			GB 2018264 A ,B	17-10-1979
			JP 1445090 C	30-06-1988
			JP 54137095 A	24-10-1979
			JP 62054129 B	13-11-1987
NL 7902769 A ,B,	12-10-1979			
US 4374975	A	22-02-1983	BR 8300212 A	11-10-1983
			CA 1197040 A1	19-11-1985
			DE 3382039 D1	17-01-1991
			EP 0085643 A2	10-08-1983
			ES 519435 D0	16-08-1984
			ES 8407070 A1	16-11-1984
			JP 58134118 A	10-08-1983
			ZA 8300357 A	26-10-1983