

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 March 2007 (08.03.2007)

PCT

(10) International Publication Number
WO 2007/027457 A3

(51) International Patent Classification:
C08L 23/00 (2006.01) *C08L 23/04* (2006.01)

(21) International Application Number:
PCT/US2006/032409

(22) International Filing Date: 17 August 2006 (17.08.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/217,007 31 August 2005 (31.08.2005) US

(71) Applicant (for all designated States except US): **FINA TECHNOLOGY, INC.** [US/US]; P.O. Box 674412, Houston, TX 77267-4412 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **MCLEOD, Michael, A.** [US/US]; 1810 Park Oaks Drive, Kemah, TX 77565-8135 (US).

(74) Agents: **ALEXANDER, David, J.** et al.; Fina Technology, Inc., P.O.Box 674412, Houston, TX 77267-4412 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

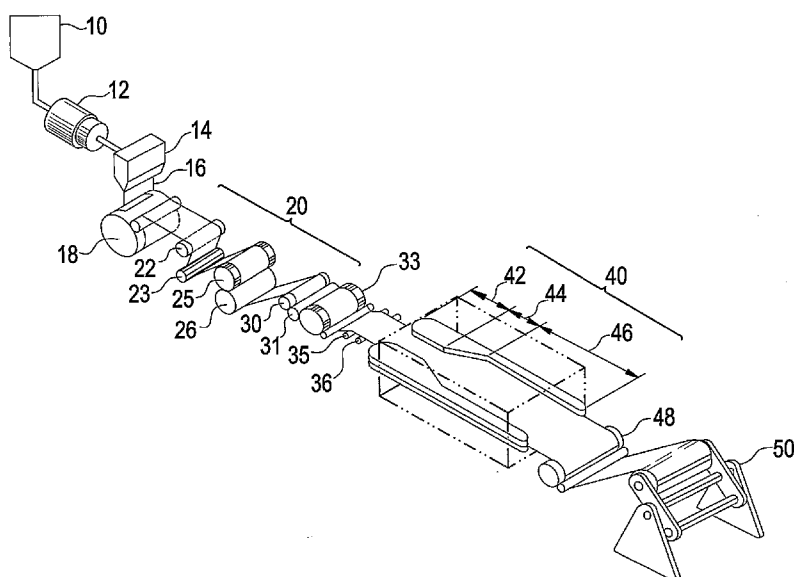
— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

— with international search report

[Continued on next page]

(54) Title: PROCESS FOR PRODUCING POLYOLEFIN FILMS



(57) Abstract: Process for producing an oriented polyolefin film using a multi- component polymer composition provided by a primary polymer component comprising an isotactic propylene homopolymer produced by the polymerization of propylene in the presence of a Ziegler-Natta catalyst and a secondary polymer component comprising a metallocene polymerized isotactic propylene polymer having a xylene solubles content which is less than that of the primary polymer component. The secondary polymer component is a propylene homopolymer or an ethylene-propylene random copolymer having an ethylene content of about 0.5 wt.% or less. The polymer components are separately co-extruded to form a multilayer co-extrudate in which the primary polymer component is present in an amount greater than the secondary polymer component. The multilayer co-extrudate is oriented in at least one direction to form an oriented film.

WO 2007/027457 A3



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.

(88) Date of publication of the international search report:

11 October 2007

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 06/32409

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - C08L 23/00, 04 (2007.01)

USPC - 525/240

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(8) - C08L 23/00, 04

USPC - 525/240

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

IPC(8) - C08L 23/00, 04

USPC - 525/240; 526/160, 348.1, 351, 943,

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

PubWEST(USPT,PGPB,EPAB,JPAB); Google Patent; Google

Search Terms: isotactic, propylene, "yield stress", polyolefin, extrusion, "ziegler-natta catalyst", polymer, metallocene, xylene

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,303,696 B1 (USHIODA et al.) 16 October 2001 (16.10.2001), entire document especially col 3, ln 12-14, col 5, ln 19-34, figure 1	1-21
Y	US 6,579,962 B1 (WHEAT et al.) 17 June 2003 (17.06.2003), entire document especially col 3, ln 28-35	1-21
Y	US 2005/0085609 A1 (APPLEYARD et al.) 21 April 2005 (21.04.2005), entire document especially para 0002, table 2	1-21

☐ Further documents are listed in the continuation of Box C.

* 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 application or patent 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

"&" document member of the same patent family

Date of the actual completion of the international search

31 May 2007 (31.05.2007)

Date of mailing of the international search report

10 AUG 2007

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774