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DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
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31 March 2011

(54) Title: HIGH MELT STRENGTH POLYESTERS FOR FOAM APPLICATIONS

(57) Abstract: The present invention relates to a branched polyethylene terephthalate-co-isophthalate for use in the manufacture of foamed articles. The branched polyethylene terephthalate-co-isophthalate can be characterized by a composition comprising i) a polyethylene terephthalate-co-isophthalate comprising from about 5 to about 15 weight % of an isophthalic acid, and ii) a branching agent comonomer, wherein the branching agent comonomer is a polyhydric alcohol having functionality of 3 or more and the polyhydric alcohol is present in an amount of from 0.005 to about 0.01 equivalents per mole of total diacids. Other embodiments of the present invention include foamed articles produced from these compositions and processes to produce these compositions and the foamed articles.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/037255**A. CLASSIFICATION OF SUBJECT MATTER***C08L 67/03(2006.01)i, C08G 63/183(2006.01)i, C08J 5/00(2006.01)i, C08J 9/228(2006.01)i*

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)

C08L 67/03; C08L 1/00; B29C 47/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: polyester, branching, terephthalate, isophthalate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002-0161082 A1 (DOUGLAS STEPHENS MCWILLIAMS et al.) 31 October 2002 See abstract; Par. [0008] and [0030]; claims 8,9,24-26, and 29.	1,3-13
A	US 2003-0228479 A1 (MARCUS DAVID SHELBY et al.) 11 December 2003 See abstract; Par. [0035]-[0040]; claims 1, 11, and 14.	1,3-13
A	US 6503586 B1 (WU; AUDREY CHUNG et al.) 07 January 2003 See abstract; col. 4, lines 16-47; col. 5, lines 55-59; table 1; claims 1-5.	1,3-13
A	US 2006-0100394 A1 (WESLEY HALE) 11 May 2006 See the whole document.	1,3-13



Further documents are listed in the continuation of Box C.



See patent family 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 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 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

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2010/037255**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 2
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

Claim 2 is described as referring to claim 2. As claim 2 does not clearly define the matter for which protection is sought, this claim does not meet the requirement of PCT Article 6.
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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