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(54) Title: GLYCOLIDE-BASED POLYESTERS

(57) Abstract: A polymer comprises reaction product of (a) one or more diacid, diester thereof, glycolide, and (b) one or more poly-
ol, wherein component (a) comprises glycolide or combinations thereof, and component (b) comprises one or more polyol compris-
ing a mixture of 1,3-cyclohexanedimethanol and 1,4-cyclohexanedimethanol, or 2,2,4,4- tetramethyl-1,3-cyclobutanediol, or com-
binations thereof.



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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. C08J5/18 C08G63/60 C08L67/00
ADD.

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)
C08G C08L C08J

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 practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 620 245 A1 (ICI PLC [GB]) 19 October 1994 (1994-10-19) claims 1, 10	1-19
A	----- US 2006/009611 A1 (HAYES RICHARD A [US] HAYES RICHARD ALLEN [US]) 12 January 2006 (2006-01-12) claims 1, 13, 14, 15, 30-35, 75, 77, 87-89; examples 11, 13, 21, 48	1-19
A	----- EP 1 535 943 A1 (ASAHI KASEI CHEMICALS CORP [JP]) 1 June 2005 (2005-06-01) paragraph [0042] - paragraph [0205]; claims 1, 7, 8, 23; example 7; table 3 ----- -/-	1-19



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

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INTERNATIONAL SEARCH REPORT

International application No.
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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.:
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:
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:

see additional sheet

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 fees, this Authority did not invite payment of additional fees.
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.:

1-19

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

International application No

PCT/US2013/076268

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2005 325170 A (NIPPON CATALYTIC CHEM IND) 24 November 2005 (2005-11-24) paragraph [0007] - paragraph [0025]; claims 1-3 -----	1-19
A	CN 102 718 955 A (UNIV CHANGZHOU) 10 October 2012 (2012-10-10) claims 1, 3 -----	1-19

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2013/076268

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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JP 2005325170	A	24-11-2005	NONE
CN 102718955	A	10-10-2012	NONE

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-19

A polymer comprising reaction product of component (a) comprises glycolide, and component (b) one or more polyol comprising a mixture of 1,3-cyclohexanedimethanol and 1,4-cyclohexanedimethanol, or 2,2,4,4-tetramethyl-1,3-cyclobutanediol, or combinations thereof.

2. claims: 20, 21

A barrier film comprising a polyester-based polymer wherein the barrier film has (a) an O₂ gas permeability of 0.4 cc-mil/100 in.² >24 hrs atm (8 cc 20 [micro] 1m² > 24 hrs atm) at 50% relative humidity (ASTM D-3985) or less, (b) a moisture permeability of 0.5 g mil/100 in.² > 24 hrs atm (9.8 g 20 [micro]/m² > 24 hrs atm) at 38[deg.]C (ASTM F-1249) or less, and (c) a glass transition temperature (T_g) of 100[deg.]C or higher.
