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(54) Title: WATER-SOLUBLE ADHESIVE



(57) Abstract: In one aspect, the invention provides a method of applying an adhesive to a paper substrate, the method comprising applying a liquid, water-soluble adhesive composition to the paper substrate, said liquid, water-soluble adhesive composition comprising an adhesive polymer dissolved in water and said adhesive polymer comprising a polyethyloxazoline. In another aspect, the invention also provides A liquid, water-soluble adhesive composition comprising adhesive polymer dissolved in water, wherein the adhesive polymer comprises one or more polyethyloxazolines in an amount of more than 50wt% and up to 70wt% based on the total weight of the water-soluble adhesive composition.



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INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER		
<i>C09J 123/16(2006.01)i, C09J 123/00(2006.01)i, C09J 7/02(2006.01)i</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) IPC 8: C09J, C08L, B32B		
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 since 1975 Japanese Utility models and applications for Utility models since 1975		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKIPASS(KIPO internal), USP, USAPP, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 03-121180 A (NITTO DENKO CORP.) 23 May 1991 See claim 1, page 615 right column, page 616 right upper column.	1, 3
A	See whole document.	2, 5 - 7
X	JP 63-317575 A (JAPAN SYNTHETIC RUBBER CO., LTD.) 26 December 1988 See claim 1, page 655, left lower column.	1
A	See whole document.	2, 3, 5 - 7
A	US 4,436,867 A (POMPLUN, W. S. et al.) 13 March 1984 See claim 1, column 1, lines 12 - 18.	1 - 3, 5 - 7
A	JP 02-139059 A (SOMAR CORP.) 29 May 1990 See whole document.	1 - 3, 5 - 7
A	US 5,300,602 A (ARITA, Y. et al.) 05 April 1994 See whole document.	1 - 3, 5 - 7
A	US 5,980,690 A (WARCHOL, J. F. et al.) 09 November 1999 See whole document.	1 - 3, 5 - 7
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 23 OCTOBER 2007 (23.10.2007)		Date of mailing of the international search report 23 OCTOBER 2007 (23.10.2007)
Name and mailing address of the ISA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140		Authorized officer CHO Han Sol Telephone No. 82-42-481-5580 

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,522,967 A (SHELDON, D. A. et al.) 11 June 1985 See whole document.	1 - 3, 5 - 7
A	US 2003-0102080 A1 (MALLIK, D. W.) 05 June 2003 See whole document.	1 - 3, 5 - 7
A	US 5,565,268 A (ZAJACZKOWSKI, M. J.) 15 October 1996 See whole document.	1 - 3, 5 - 7

INTERNATIONAL SEARCH REPORT

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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.: 4, 8 - 13
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.

PCT/US2007/066357

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