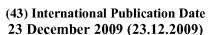
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(54) Title: STABLE AND STERILE TISSUE ADHESIVE COMPOSITION WITH A CONTROLLED HIGH VISCOSITY

(57) Abstract: A stable and sterile adhesive composition with a controlled level of high viscosity is disclosed in the present invention. Adhesive compositions with different ranges of viscosity could be prepared by heating the adhesive monomer composition at mild temperature in the presence of pluronic polymer. The viscosity of the adhesive composition is able to be controlled to any desired level. A method of stabilizing the adhesive composition with a desired level of high viscosity is provided by using the combination of free radical and acid stabilizers. Methods for packaging, sterilizing and applying the adhesive in the medical field are also provided.

INTERNATIONAL SEARCH REPORT

International application No PCT/US2009/048115

A. CLASSIFICATION OF SUBJECT MATTER INV. A61L24/00 A61L2 A61L24/06 C09J4/00 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) C09J 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 C. DOCUMENTS CONSIDERED TO BE RELEVANT Category* Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. X US 2007/078207 A1 (JONN JERRY Y [US] ET AL) 5 April 2007 (2007-04-05) 1-28,32,33 paragraphs [0016], [0017], [0019], [0021],[0022] paragraphs [0025] - [0031], [0035] -[0037] paragraphs [0053], [0060], [0061], [0065] - [0067], [0071], [0073], [0078]; claims; examples Α US 2006/062687 A1 (MORALES CARLOS R [US]) 1-28,32,23 March 2006 (2006-03-23) 33 the whole document US 2002/037272 A1 (ASKILL IAN N [US] ET 1-28,32,AL) 28 March 2002 (2002-03-28) 33 the whole document Further documents are listed in the continuation of Box C. See patent family annex. Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but "A" document defining the general state of the art which is not cited to understand the principle or theory underlying the considered to be of particular relevance invention earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing date "L" document which may throw doubts on priority claim(s) or involve an inventive step when the document is taken alone which is cited to establish the publication date of another citation or other special reason (as specified) "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 docu-"O" document referring to an oral disclosure, use, exhibition or other means ments, such combination being obvious to a person skilled document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 21 July 2010 12/10/2010 Name and mailing address of the ISA/ Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Derrien, Anne-Cécile Fax: (+31-70) 340-3016

INTERNATIONAL SEARCH REPORT

International application No. PCT/US2009/048115

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:
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
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.: 1-28, 32, 33
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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-28, 32, 33

An adhesive composition comprising a cyanoacrylate and poloxamer polymer additive and the method to obtain said adhesive.

2. claims: 29-31

a method of making a stable adhesive composition, said composition comprising adding cyanoacrylate gel to a cyanoacrylate monomer.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2009/048115

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 2007078207	A1	05-04-2007	AU CA CN EP JP KR WO ZA	2006297364 A1 2624077 A1 101495377 A 1928920 A2 2009510226 T 20080064815 A 2007041143 A2 200803713 A	12-04-2007 12-04-2007 29-07-2009 11-06-2008 12-03-2009 09-07-2008 12-04-2007 30-09-2009
US 2006062687	A1	23-03-2006	EP WO	1807121 A2 2006034064 A2	18-07-2007 30-03-2006
US 2002037272	A1	28-03-2002	NON	E .	