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(54) Title: BIODEGRADABLE POLYURETHANE/UREA COMPOSITIONS

(57) Abstract: The present invention relates to biocompatible, biodegradable polyurethane/urea polymeric compositions that are capable of *in-vivo* curing with low heat generation to form materials suitable for use in scaffolds in tissue engineering applications such as bone and cartilage repair. The polymers are desirably flowable and injectable and can support living biological components to aid in the healing process. They may be cured *ex-vivo* for invasive surgical repair methods, or alternatively utilized for relatively non-invasive surgical repair methods such as by arthroscopy. The invention also relates to prepolymers useful in the preparation of the polymeric compositions, and to methods of treatment of damaged tissue using the polymers of the invention.



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INTERNATIONAL SEARCH REPORT

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PCT/AU03/00935

A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. ⁷ : C08G 18/32, 18/10, 18/77; C08K 5/00, 3/32; A61L 27/18, 27/58, 31/06		
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 18/00-18/87; A61L 27/00-27/60, 31/00-31/18		
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) WPAT; JAPIO; CAPLUS; IPC (above) and/or Keywords		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/02168 A (LIFE MEDICAL SCIENCES INC.), 21 January 1999 Pages 6-14, 18-20, 25, claims 32, 45, 58 and 71	1-2, 4-7, 11-12 & 26-28
X	<i>Makromol. Chem., Rapid Commun.</i> , Vol 9, issued 1988, P. Bruin et al, "Design and synthesis of biodegradable poly(ester-urethane) elastomer networks composed of non-toxic building blocks", pp 589-594	1-2, 4-5, 7, 10-11, 16, 19, 22 and 26
X	<i>Polymer</i> , Elsevier, Vol 42, Issued 2001, A.Helminen et al, "Biodegradable crosslinked polymers based on triethoxysilane terminated polylactide oligomers", pp 3345-3353	1-2, 4-5, 7, 11-12, 23 & 26-27
☒ Further documents are listed in the continuation of Box C ☒ See patent family annex		
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Date of the actual completion of the international search 12 August 2003		Date of mailing of the international search report 19 AUG 2003
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929		Authorized officer JAMES DZIEDZIC Telephone No : (02) 6283 2495

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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.
X	US 6376637 B (BRUCHMANN et al), 23 April 2002 Whole document	1-2 & 4-6
X	WO 02/10247 A (WOODBIDGE FOAM CORPORATION), 7 February 2002 Abstract, Whole document	1-7
X	WO 00/12579 A (PPG INDUSTRIES OHIO, INC.), 9 March 2000 Page 25 (L9) - 31 (L18)	1-2, 4-7
X	US 5886127 A (NEWKOME et al), 23 March 1999 Fig. 3, 4A - 5D, Cols 3-5 and 7-10	1-2, 4-5 & 26
X	US 20010005738 A (BRUCHMANN et al), 28 June 2001 Whole document	1-5
X	EP837084 (UNITED STATES SURGICAL CORPORATION), 22 April 1998 Page 3 (L34-43), page 5 (L38) - page 7 (L39), page 9 (L1-45), Examples 10-18, 19-23 and 26-28	1-2, 4-5, 7, 11-12, 23-24, 26-28
X	US 5981684 A (BRUCHMANN et al), 9 November 1999 Whole document	1-5
X	US 5041516 A (FRECHET et al), 20 August 1991 Cols 5-6, 13-15 and 19-21	1-2, 4-5, 11 & 26

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU03/00935

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
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END OF ANNEX					