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(71) Applicant: ADVANCED CARDIOVASCULAR SYSTEMS, INC. [US/US]; 3200 Lakeside Drive, P.O. Box 58167, Santa Clara, CA 95052–8167 (US).

(72) Inventors: LEE, Jeong, S.; 23637 East Goldrush Drive, Diamond Bar, CA 91765 (US). DUTTA, Debashish; 2250 Monroe Street # 145, Santa Clara, CA 95050 (US).

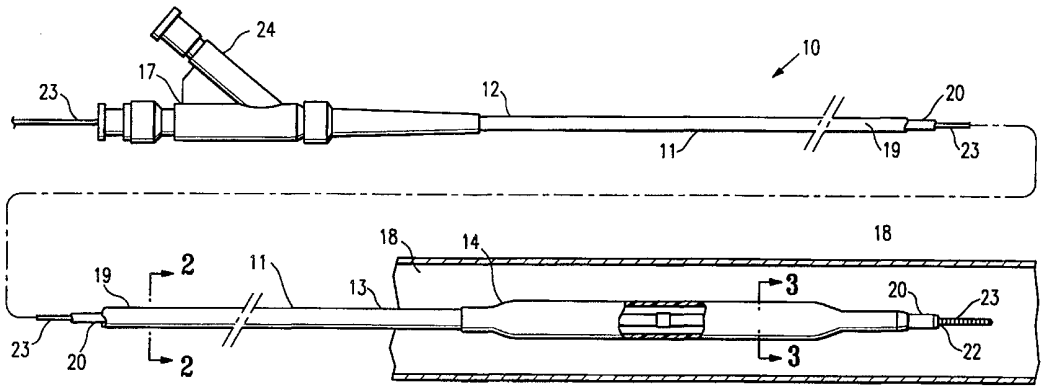
(74) Agents: LYNCH, Edward, J.; Heller Ehrman White & McAuliffe, 525 University Avenue, Palo Alto, CA 94301–1900 (US) et al.

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(54) Title: POLYETHER BLOCK AMIDE CATHETER BALLOONS



(57) Abstract

An inflatable member such as a ballon which is formed at least in part of a polyamide/polyether block copolymer thermoplastic elastomer, commonly referred to as polyether block amide (PEBA). The presently preferred PEBA copolymer is polyamide/polyether polyester copolymer, such as PEBAX®. The balloon of the invention exhibits high tensile strength, high elongation, and low flexural moduli. The balloon may be formed as a single layer of PEBA, or as a multilayer coextrudate having at least one PEBA layer. The balloon may be 100 % PEBA or a blend of PEBA with another polymer, such as nylon.

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INTERNATIONAL SEARCH REPORT

rnational Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61L29/00

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)
IPC 6 A61L A61M A61F C08L

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 95 23619 A (SCIMED LIFE SYSTEMS INC) 8 September 1995 see page 1; claims 1,4-13	1-10 1-10,12, 13, 16-18, 20,21
Y	EP 0 505 686 A (ADVANCED CARDIOVASCULAR SYSTEM) 30 September 1992 see page 3, line 42 see line 45-46	1-10,20, 21
Y	WO 95 09667 A (BOSTON SCIENT CORP) 13 April 1995 see page 4, line 26-36 see page 5, line 1-5 see page 7, line 2-10 see page 9, line 18-24	1-10,12, 13,16-18

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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2

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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 4 898 591 A (JANG YUE-TEH ET AL) 6 February 1990 see page 1 see column 3 see column 4 ---	1,12-15
A	EP 0 697 219 A (ADVANCED CARDIOVASCULAR SYSTEM) 21 February 1996 see line 2; claim 1 -----	1,11

2

INTERNATIONAL SEARCH REPORT

Information on patent family members

national Application No
PCT/US 98/19627

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9523619 A	08-09-1995	CA 2184383 A	08-09-1995
		EP 0748232 A	18-12-1996
		JP 9509860 T	07-10-1997
		US 5556383 A	17-09-1996
		US 5830182 A	03-11-1998
EP 0505686 A	30-09-1992	CA 2060067 A	29-07-1992
		DE 69215130 D	19-12-1996
		DE 69215130 T	07-05-1997
		JP 6023057 A	01-02-1994
		US 5507768 A	16-04-1996
		US 5782855 A	21-07-1998
WO 9509667 A	13-04-1995	CA 2173139 A	13-04-1995
		EP 0738168 A	23-10-1996
		JP 9506008 T	17-06-1997
		US 5797877 A	25-08-1998
US 4898591 A	06-02-1990	AT 101050 T	15-02-1994
		AU 638936 B	15-07-1993
		AU 3986189 A	05-03-1990
		AU 4444693 A	14-10-1993
		CA 1326802 A	08-02-1994
		DE 68912943 D	17-03-1994
		DE 68912943 T	11-05-1994
		EP 0429481 A	05-06-1991
		JP 2792974 B	03-09-1998
		JP 4502412 T	07-05-1992
		WO 9001345 A	22-02-1990
EP 0697219 A	21-02-1996	US 5554120 A	10-09-1996
		CA 2154516 A	26-01-1996
		JP 8127677 A	21-05-1996
		US 5849846 A	15-12-1998
		US 5565523 A	15-10-1996
		US 5747591 A	05-05-1998