(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(10) International Publication Number WO 2016/027097 A3

(43) International Publication Date 25 February 2016 (25.02.2016)

(51) International Patent Classification:

801D 53/04 (2006.01) 801J 20/34 (2006.01)

A61M 16/00 (2006.01) A61M 16/10 (2006.01)

(21) International Application Number:

PCT/GB2015/052426

(22) International Filing Date:

20 August 2015 (20.08.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

1414820.9 20 August 2014 (20.08.2014)

GB

- (71) Applicant: SAGETECH MEDICAL EQUIPMENT LIMITED [GB/GB]; 5 Park Court, Pyrford Road, West Byfleet, Surrey KT14 6SD (GB).
- (72) Inventor: BROWN, Sebastian Matthew, The Croft, Bridgetown Hill, Totnes Devon TQ9 7TA (GB).
- (74) Agents: BRANNEN, Joseph et al.; Keltie LLP, No.1 London Bridge, London, Greater London SE1 9BA (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,

DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

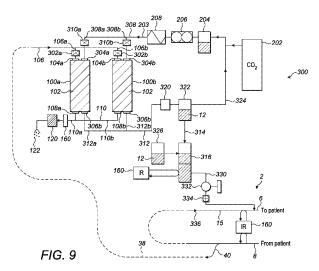
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- (88) Date of publication of the international search report:

26 May 2016

(54) Title: IMPROVEMENTS TO HALOCARBON RECYCLING METHODS AND SYSTEMS



(57) Abstract: A method for capturing halocarbon from a gas, the method comprising processing gas containing halocarbon with material which is undamaged by exposure to supercritical fluid. A method for reclaiming halocarbon from a material, the method comprising exposing the material to a supercritical fluid. A module for processing a gas containing halocarbon, the module comprising material for capturing halocarbon from a gas, wherein the module is arranged to withstand supercritical fluid.



International application No PCT/GB2015/052426

A. CLASSIFICATION OF SUBJECT MATTER INV. B01D53/04 A61M16/00 B01J20/34 A61M16/10 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)

A61M B01J B01D

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

0-4*		Relevant to claim No.	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
X	WO 2011/026230 A1 (BLUE ZONE TECHNOLOGIES LTD [CA]; FILIPOVIC DUSANKA [CA]; WHITBY LAUREN) 10 March 2011 (2011-03-10)	1-4, 11-23, 46,52, 54,65-67	
Y	claims 12, 13 figures 1, 4b, 4c paragraphs [0033], [0046], [0056]/	1-23, 46-67	

X Further documents are listed in the continuation of Box C.	X See patent family annex.			
"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 another 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 15 March 2016	Date of mailing of the international search report $14/04/2016$			
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Pöhlmann, Robert			

2

International application No
PCT/GB2015/052426

tion) DOCUMENTS CONSIDERED TO BE BELEVANT	, ,
IIIII). DOCUMENTS CONSIDERED TO BE RELEVANT	T
Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
EP 0 682 980 A2 (LINDE AG [DE]) 22 November 1995 (1995-11-22)	1-11,13, 16-18, 24-52, 54, 56-58, 63-65, 68-99 1-23,
column 1, Time 3 - Time 10 column 1, line 47 - column 2, line 27 column 2, line 42 - line 49 column 3, line 32 - line 47	46-67
CA 1 339 833 C (PRAXAIR CANADA INC [CA]) 21 April 1998 (1998-04-21) claims 1-26	1-23, 46-67
JP 2004 174387 A (CHUBU ELECTRIC POWER; SHOWA ELECTRIC WIRE & CABLE CO) 24 June 2004 (2004-06-24) paragraphs [0008], [0014] - [0022], [0037] figure 1 claim 1	24-46, 68-99
US 2003/044514 A1 (RICHARD ROBERT E [US]) 6 March 2003 (2003-03-06) paragraphs [0001], [0004], [0033], [0036] claim 1	100, 102-117
EP 1 911 481 A2 (NEXT SAFETY INC [US]) 16 April 2008 (2008-04-16) claims 1-7 paragraphs [0051] - [0054] drug compounds: desflurane, enflurane, halothane, isofurane, sevoflurane; table 1	1-117
US 2002/020462 A1 (WAGENHEIM SERGE [FR]) 21 February 2002 (2002-02-21) paragraphs [0001], [0012], [0097], [0098] claims 1-5	1-117
EP 0 677 332 A2 (SIEVERS ROBERT E [US]) 18 October 1995 (1995-10-18) claims 1-7	1-117
	EP 0 682 980 A2 (LINDE AG [DE]) 22 November 1995 (1995-11-22) column 1, line 3 - line 16 column 1, line 47 - column 2, line 27 column 2, line 42 - line 49 column 3, line 32 - line 47 CA 1 339 833 C (PRAXAIR CANADA INC [CA]) 21 April 1998 (1998-04-21) claims 1-26 JP 2004 174387 A (CHUBU ELECTRIC POWER; SHOWA ELECTRIC WIRE & CABLE CO) 24 June 2004 (2004-06-24) paragraphs [0008], [0014] - [0022], [0037] figure 1 claim 1 US 2003/044514 A1 (RICHARD ROBERT E [US]) 6 March 2003 (2003-03-06) paragraphs [0001], [0004], [0033], [0036] claim 1 EP 1 911 481 A2 (NEXT SAFETY INC [US]) 16 April 2008 (2008-04-16) claims 1-7 paragraphs [0051] - [0054] drug compounds: desflurane, enflurane, halothane, isofurane, sevoflurane; table 1 US 2002/020462 A1 (WAGENHEIM SERGE [FR]) 21 February 2002 (2002-02-21) paragraphs [0001], [0012], [0097], [0098] claims 1-5 EP 0 677 332 A2 (SIEVERS ROBERT E [US]) 18 October 1995 (1995-10-18)

International application No. PCT/GB2015/052426

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:
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
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.: 1-117
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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-23, 46-67

A method and a system for capturing halocarbons from a gas on a material (e.g. a filter)

2. claims: 24-45

A method for reclaiming halocarbons from a material (e.g. a filter) by exposure to a supercritical fluid

3. claims: 68-99

A method and a system for separating halocarbon from a supercritical solution $% \left(1\right) =\left(1\right) +\left(1$

4. claims: 100-117

A method of delivering anaesthetic agent to a medical device, the agent being dissolved in a supercritical fluid

5. claims: 118-146

A method for recycling halocarbon within a medical system

Information on patent family members

International application No
PCT/GB2015/052426

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 2011026230	A1	10-03-2011	AU CA CN EP JP US US	2010291823 2772776 102574098 2473272 2013503039 2012222556 2015336864 2011026230	A1 A1 A A1 A1	26-04-2012 10-03-2011 11-07-2012 11-07-2012 31-01-2013 06-09-2012 26-11-2015 10-03-2011
EP 0682980	A2	22-11-1995	DE EP	4417829 0682980		23-11-1995 22-11-1995
CA 1339833	C	21-04-1998	AR AU AU BR CN DE EP JP MX ZA	1339833 88101700 3882559	T B2 B2 A C A T2 A2 T3 B2 A B	30-06-1993 15-08-1993 20-09-1990 05-09-1991 11-10-1988 21-04-1998 05-10-1988 18-11-1993 28-09-1988 01-11-1994 18-06-1997 22-12-1988 11-04-1994 30-08-1988
JP 2004174387	Α	24-06-2004	NONE			
US 2003044514	A1	06-03-2003	CA EP JP US WO	2447557 1395305 2005505318 2003044514 02100456	A1 A A1	19-12-2002 10-03-2004 24-02-2005 06-03-2003 19-12-2002
EP 1911481	A2	16-04-2008	CA EP EP JP US US	2662777 1902742 1911481 2010504171 2008066739 2008066741 2008036801	A1 A2 A A1 A1	27-03-2008 26-03-2008 16-04-2008 12-02-2010 20-03-2008 20-03-2008 27-03-2008
US 2002020462	A1	21-02-2002	AT CA DE DK EP ES FR JP PT US	324937 2353679 60119231 1174178 1174178 2263570 2811910 2002154974 1174178 2002020462	A1 T2 T3 A1 T3 A1 A E	15-06-2006 18-01-2002 16-05-2007 28-08-2006 23-01-2002 16-12-2006 25-01-2002 28-05-2002 29-09-2006 21-02-2002
EP 0677332	A2	18-10-1995	DE DE EP EP	69525557 69525557 0677332 1160018	T2 A2	04-04-2002 31-10-2002 18-10-1995 05-12-2001

Information on patent family members

International application No
PCT/GB2015/052426

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		US 5639441 A US 6095134 A	17-06-1997 01-08-2000