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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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(54) Title: THE USE OF QUATERNARY AMMONIUM BETAINES IN THE PREVENTION OF MOLD, MILDEW, AND FUNGUSES IN NEW AND/OR EXISTING CONSTRUCTION

(57) Abstract: The present invention relates to the use of quaternary ammonium compositions in the prevention of microbial growth such as mold, fungus, and mildew in new and/or existing construction.

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2007/060240

**A. CLASSIFICATION OF SUBJECT MATTER**  
 INV. A01N55/08 A01P3/00

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)  
 A01N

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, WPI Data, CHEM ABS Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 976 307 A (BERNARD RUDNER ET AL) 21 March 1961 (1961-03-21) column 27, line 45 - line 60 example V claim 1	1-24
A	WO 2005/097729 A (ALBEMARLE CORP [US]; SAUER JOE D [US]; KNIGHT CHRISTOPHER J [US]; EVER) 20 October 2005 (2005-10-20) paragraph [0020] paragraph [0094] paragraph [0096] - paragraph [0097] paragraph [0101] paragraph [0105] - paragraph [0106] paragraph [0118] examples 29-46	1-24

Further documents are listed in the continuation of Box C.       See patent family annex.

\* Special categories of cited documents :

<p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p>	<p>*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</p> <p>*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</p> <p>*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.</p> <p>* &amp; * document member of the same patent family</p>
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Date of the actual completion of the international search <b>7 October 2008</b>	Date of mailing of the international search report <b>13/10/2008</b>
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  <p style="text-align: center;"><b>Fort, Marianne</b></p>
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2007/060240

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 2006/257578 A1 (ZHANG JUN [US] ET AL) 16 November 2006 (2006-11-16) claims 1,13 paragraph [0044] - paragraph [0046]	1-24
A	WO 94/28715 A (LONZA AG [US]) 22 December 1994 (1994-12-22) page 1, line 21 - line 35 page 8, line 19 - page 9, line 23 page 11, line 23 - page 15, line 10 page 17, line 20 - page 19, line 15 page 24, line 25 - page 27, line 7 page 37, line 25 - page 39, line 25 page 56; example 13 page 57; examples 14,15 page 58; examples 16-19 page 67; example 50 page 73; examples 76-78 page 77; examples 93,94	1-24
A	US 6 080 789 A (LUTZ PATRICK J [US]) 27 June 2000 (2000-06-27) the whole document	1-24

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/060240

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2976307	A	GB 971907 A	07-10-1964
WO 2005097729	A	AU 2005230871 A1	20-10-2005
		AU 2005230872 A1	20-10-2005
		BR PI0509531 A	18-12-2007
		BR PI0509546 A	18-12-2007
		CN 1946673 A	11-04-2007
		CN 1946674 A	11-04-2007
		EP 1732878 A2	20-12-2006
		EP 1730098 A2	13-12-2006
		JP 2007530592 T	01-11-2007
		JP 2007530593 T	01-11-2007
		WO 2005097730 A2	20-10-2005
US 2006257578	A1	NONE	
WO 9428715	A	AT 310618 T	15-12-2005
		AT 293526 T	15-05-2005
		AT 294503 T	15-05-2005
		AT 275822 T	15-10-2004
		AU 7107694 A	03-01-1995
		CA 2162128 A1	22-12-1994
		DE 69433995 D1	21-10-2004
		DE 69433995 T2	22-09-2005
		DE 69434347 D1	25-05-2005
		DE 69434347 T2	09-03-2006
		DE 69434362 D1	09-06-2005
		DE 69434362 T2	09-03-2006
		DE 69434556 D1	29-12-2005
		DE 69434556 T2	17-08-2006
		DK 1122044 T3	11-07-2005
		EP 0702517 A1	27-03-1996
		ES 2254267 T3	16-06-2006
		ES 2238344 T3	01-09-2005
		ES 2239635 T3	01-10-2005
		ES 2225829 T3	16-03-2005
		IL 109964 A	22-09-1999
		JP 4070234 B2	02-04-2008
		JP 8511543 T	03-12-1996
		JP 2005225886 A	25-08-2005
		NZ 268249 A	26-08-1998
		PT 1122044 T	30-06-2005
		PT 1121857 T	29-07-2005
		PT 702517 T	31-01-2005
		ZA 9403999 A	03-02-1995
US 6080789	A	AU 4374896 A	26-06-1996
		CA 2206586 A1	13-06-1996
		WO 9617518 A1	13-06-1996