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(54) Title: BINDER COMPOSITIONS

(57) Abstract: A binder composition for a non-woven fabric, the binder composition comprising a latex, the latex including a heterogeneous blend of dispersed polymer particles and a surfactant, where the particles include from about 55 to about 100% by weight of a gelled polymer, from about 1 to about 15% by weight polymeric units bearing an acid functionality, and where dried films of the latex exhibit a Tg of from about -50°C to about 60°C.



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INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C08L13/02 C08L33/02 D04H1/64

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 7 C08L D04H

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, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 166 259 A (SCHMEING ET AL) 24 November 1992 (1992-11-24) cited in the application examples column 8, lines 35-45 -----	1-8
X	US 2002/028858 A1 (DIEHL DAVID F ET AL) 7 March 2002 (2002-03-07) claims 1-6 paragraphs [0001], [0019] -----	1-8
X	WO 01/46283 A (OMNOVA SOLUTIONS INC) 28 June 2001 (2001-06-28) claims 1-9; examples page 16, lines 7-19 ----- -/-	1-8

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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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 6 291 573 B1 (PAKUSCH JOACHIM ET AL) 18 September 2001 (2001-09-18) column 5, lines 39-41 claims 1,7; examples -----	1-8
X	US 5 786 100 A (TSURUOKA ET AL) 28 July 1998 (1998-07-28) claims; examples -----	1-8
X	US 5 008 326 A (STACK ET AL) 16 April 1991 (1991-04-16) examples column 1, lines 9-13 -----	1-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/001168

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5166259	A	24-11-1992	US 4808660 A	28-02-1989
			US 5478641 A	26-12-1995

US 2002028858	A1	07-03-2002	US 6337359 B1	08-01-2002
			US 2003105190 A1	05-06-2003
			US 2005043441 A1	24-02-2005

WO 0146283	A	28-06-2001	AU 2278401 A	03-07-2001
			EP 1244720 A1	02-10-2002
			JP 2003518174 T	03-06-2003
			WO 0146283 A1	28-06-2001
			US 2003125453 A1	03-07-2003

US 6291573	B1	18-09-2001	DE 19757298 A1	24-06-1999
			EP 0924241 A2	23-06-1999

US 5786100	A	28-07-1998	JP 3166201 A	18-07-1991
			JP 3166202 A	18-07-1991
			JP 2765137 B2	11-06-1998
			JP 3008896 A	16-01-1991
			US 5637644 A	10-06-1997
			US 5444118 A	22-08-1995
			DE 69013995 D1	15-12-1994
			DE 69013995 T2	16-03-1995
			EP 0407059 A2	09-01-1991
			JP 2820128 B2	05-11-1998
			JP 9118841 A	06-05-1997
			JP 2555294 B2	20-11-1996
			JP 3113096 A	14-05-1991
			JP 2541324 B2	09-10-1996
			JP 3113097 A	14-05-1991
			JP 3109470 A	09-05-1991
			JP 7076324 B	16-08-1995
			JP 2792165 B2	27-08-1998
			JP 3109450 A	09-05-1991
			JP 2792166 B2	27-08-1998
			JP 3109451 A	09-05-1991
			KR 9608305 B1	24-06-1996
			JP 2779392 B2	23-07-1998
			JP 3227303 A	08-10-1991
			JP 2779430 B2	23-07-1998
			JP 3227304 A	08-10-1991
			JP 2773333 B2	09-07-1998
			JP 3227302 A	08-10-1991

US 5008326	A	16-04-1991	US 5028655 A	02-07-1991
			US 5137963 A	11-08-1992
