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Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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(54) Title: INK-JET INK FORMULATIONS CONTAINING MAGNESIUM SULFATE

(57) Abstract: An ink-jet ink comprises an aqueous liquid vehicle, at least 1% by weight colorant; and a black-to-color bleed control enhancing amount of magnesium sulfate or hydrate thereof.

International application No. **PCT/US2008/052472**

A. CLASSIFICATION OF SUBJECT MATTER

C09D 11/00(2006.01)i

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 8 :C09D

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) eKIPASS(KIPO internal), USPAT, 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 5,695,820 A (DAVIS et al.) DEC., 09, 1997	
	see col. 3-4 and 6, claims 1, 4-8 and 10	1-3, 8-10
Y		4, 6-7
A		5
Y	US 2004/0216638 A1 (ROLLY) NOV., 04, 2004	
	see paragraphs [0031] and [0036]-[0038]	4, 6
Y	EP 1 514 913 A2 (YOSHIHARA et al.) MAR., 16, 2005	
	see page 5 p-3	7
Α	EP 1 464 685 A1 (MANABU et al.)	
	see table 4 a-18	5
Α	US 6,824,598 B2 (THORNBERRY et al.)	
**	see col. 3 lines 1-16	5

		Further	documents	are	listed	in	the	cont	tinua	tion	of	Box	С.
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See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5695820	09.12.1997	NONE	
US 2004-0216638 A1	04.11.2004	CN 1780886 A EP 1618161 A2 JP 2006-526062 T2 US 7033423	31.05.2006 25.01.2006 16.11.2006 25.04.2006
EP 1514913 A2	16.03.2005	AT 359331 E DE 6004005791 CO DE 6004005791 T2 EP 1514913 A3 EP 1681322 A1	15.05.2007 24.05.2007 16.08.2007 27.04.2005 19.07.2006
EP 1464685 A1	06.10.2004	EP 1464685 B1 JP 2004-315790 A2 US 2004-0187733 A1	11.06.2008 11.11.2004 30.09.2004
US 6824598 B2	30.11.2004	AU 2003-293089 A1 EP 1578875 A1 JP 2006-509073 T2 US 2003-0110980 A1	23.06.2004 28.09.2005 16.03.2006 19.06.2003