

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number  
**WO 2004/035684 A3**

- (51) International Patent Classification<sup>7</sup>: **C08L 43/02**, C09D 11/00, 11/16
- (21) International Application Number:  
PCT/EP2003/011189
- (22) International Filing Date: 9 October 2003 (09.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
02405888.5 17 October 2002 (17.10.2002) EP
- (71) Applicant (for all designated States except US): **CIBA SPECIALTY CHEMICALS HOLDING INC.** [CH/CH]; Klybeckstrasse 141, CH-4057 Basel (CH).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BUJARD, Patrice** [CH/CH]; Oberer Rebbbergweg 29, CH-4153 Reinach (CH). **SIEBER, Werner** [CH/CH]; Niederholzstrasse 81, CH-4125 Riehen (CH). **BIRY, Stéphane** [FR/FR]; 2, rue du Soleil, F-68128 Village-Neuf (FR).
- (74) Common Representative: **CIBA SPECIALTY CHEMICALS HOLDING INC.**; Klybeckstrasse 141, CH-4057 Basel (CH).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report
- (88) Date of publication of the international search report:  
7 October 2004
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCESS FOR PRINTING SUBSTRATES ACCORDING TO THE INK-JET PRINTING METHOD

(57) Abstract: The present invention relates to an aqueous ink composition for the ink-jet printing method, which comprises a) metallic or non-metallic, inorganic platelet-shaped particles having an average particle diameter of at least 2 µm, b) a dispersant (dispersing agent) and c) a binder. The ink compositions according to the invention are able to yield prints having a metallic appearance or prints having a colour that changes according to the viewing angle ("flop effect").

WO 2004/035684 A3

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/11189

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 C08L43/02 C09D11/00 C09D11/16		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) IPC 7 C08L 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 practical, search terms used) EPO-Internal		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 433 117 B1 (MA SHEAU-HWA ET AL) 13 August 2002 (2002-08-13) column 1, line 43 - column 2, line 36 column 6, line 16 - line 18 abstract; claims 1-15; example 1 -----	1-10
X	EP 1 195 410 A (SUMITOMO SEIKA CHEMICALS) 10 April 2002 (2002-04-10) column 1, line 16 - line 18 column 2, line 23 - line 32 column 5, line 37 - line 52 abstract; claim 1; examples 1-6 -----	1-10
X	US 2002/035173 A1 (MA SHEAU-HWA ET AL) 21 March 2002 (2002-03-21) page 1, paragraph 7 - paragraph 8 page 2, paragraph 13 - paragraph 19 abstract; claims 1-18; examples 1-7 -----	1-10
-/--		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.		
<input checked="" type="checkbox"/> Patent family members are listed in annex.		
° Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance	"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	
"E" earlier document but published on or after the international filing date	"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	
"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)	"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.	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search  <div style="text-align: center; font-weight: bold;">12 February 2004</div>	Date of mailing of the international search report  <div style="text-align: center; font-weight: bold;">21 June 2004 (21.06.2004)</div>	
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  <div style="text-align: center; font-weight: bold;">Glomm, B</div>	

INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 03/11189

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 822 238 A (DU PONT) 4 February 1998 (1998-02-04) page 2, line 42 - line 54 page 3, line 26 - line 49 abstract; claims 1-13; examples 1-7 -----	1-10
X	US 5 707 433 A (IKEMOTO ESTUO ET AL) 13 January 1998 (1998-01-13) column 1, line 45 - column 2, line 5 column 3, line 14 - line 23 abstract; claims 1-8; examples 1-8 -----	1-10
X	US 5 310 778 A (SHOR ARTHUR ET AL) 10 May 1994 (1994-05-10) column 2, line 23 - line 34 column 2, line 58 - column 3, line 21 column 3, line 34 - line 62 abstract; claims 1-3 -----	1-10

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP 03/11189

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 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:

1.  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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  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 fee, this Authority did not invite payment of any additional fee.
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.:
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.:

1 - 10

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

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: 1-10

Aqueous ink composition comprising platelet-shaped particles.

---

2. claim: 11

Platelet-shaped aluminium particles.

---

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/11189

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6433117	B1	13-08-2002	AU 6398300 A 05-03-2001
			CA 2378837 A1 15-02-2001
			EP 1200492 A1 02-05-2002
			JP 2003506536 T 18-02-2003
			WO 0110918 A1 15-02-2001
-----			
EP 1195410	A	10-04-2002	JP 2000302966 A 31-10-2000
			EP 1195410 A1 10-04-2002
			WO 0064979 A1 02-11-2000
-----			
US 2002035173	A1	21-03-2002	DE 69717558 D1 16-01-2003
			DE 69717558 T2 25-09-2003
			EP 0822238 A2 04-02-1998
			ES 2185839 T3 01-05-2003
			JP 3188219 B2 16-07-2001
			JP 10095857 A 14-04-1998
-----			
EP 0822238	A	04-02-1998	DE 69717558 D1 16-01-2003
			DE 69717558 T2 25-09-2003
			EP 0822238 A2 04-02-1998
			ES 2185839 T3 01-05-2003
			JP 3188219 B2 16-07-2001
			JP 10095857 A 14-04-1998
			US 2002035173 A1 21-03-2002
-----			
US 5707433	A	13-01-1998	NONE
-----			
US 5310778	A	10-05-1994	DE 4328215 A1 03-03-1994
			JP 2512861 B2 03-07-1996
			JP 6157954 A 07-06-1994
-----			