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(74) Agents: OHTANI, Tamotsu et al; OHTANI PATENT
OFFICE, Bridgestone Toranomon Bldg., 6F, 25-2, Tora-
nomon 3-chome, Minato-ku, Tokyo 105-0001 (JP).

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(71) Applicant (*for all designated States except US*): KAO
CORPORATION [JP/JP]; 14-10, Nihonbashi Kayabacho
1-chome, Chuo-ku, Tokyo 103-8210 (JP).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): MIZUSHIMA,
Ryuia [JP/JP]; c/o Kao Corporation, Research Laborato-
ries, 1334, Minato, Wakayama-shi, Wakayama 640-8580
(JP). TAKIZAWA, Nobuyuki [JP/JP]; c/o Kao Corpora-
tion, Research Laboratories, 1334, Minato, Wakayama-shi,
Wakayama 640-8580 (JP).

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(54) Title: WATER-BASED INKS FOR INK-JET PRINTING

(57) Abstract: The present invention relates to (1) a process for producing a water dispersion for ink-jet printing containing col-
orant-containing polymer particles which includes a step I of obtaining a dispersion of colorant-containing polymer particles; a step
II of obtaining a water dispersion of the colorant-containing polymer particles from the dispersion obtained in the step I; a step III of
mixing the water dispersion obtained in the step II with an organic solvent (B) to suitably control a relative dielectric constant of a
mixed solvent in the resultant dispersion, thereby precipitating the colorant-containing polymer particles; and a step IV of separating
precipitates obtained in the step III from the dispersion and re-dispersing the precipitates in a water-based solvent; (2) a water-based
ink for ink-jet printing which is excellent in ejection stability and optical density; (3) a process for purifying a water dispersion for
ink-jet printing; and (4) a process for producing a dispersion containing groups of fine particles.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

INV. C09D11/00 C09B67/00 C08F6/00

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)
C09D C09B C08F

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	WO 2006/095794 A (KAO CORP [JP]; DOI YASUHIRO [JP]; ITO YASUSHI [JP]; NAGASHIMA SHIGEKI) 14 September 2006 (2006-09-14) claims; examples -----	1-9,13
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X	WO 2006/054787 A (KAO CORP [JP]; TANAKA NOBUSHIGE [JP]; TSURU ISAO [JP]; HOSHI MASATO [J] 26 May 2006 (2006-05-26) claims; examples ----- -/-	1-9,13



Further documents are listed in the continuation of Box C.



See patent family annex

* Special categories of cited documents .

- 'A' document defining the general state of the art which is not considered to be of particular relevance
- 'E' earlier document 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

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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

Schmitz, VoIker

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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
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2007/074584

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:

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 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

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable 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.:

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: 1-9,13

A process for producing a water dispersion for inkjet printing containing particles of a polymer which contain a colorant, an organic solvent and water comprising the steps I to IV and an ink produced according said process.

2. claims: 10-12

A process for producing a dispersion containing groups of fine particles comprising the steps i and ii or iii.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/JP2007/074584

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