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Declarations under Rule 4.17:

- 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))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

27 December 2012

(54) Title: TWO-PACK PLASTISOL INK COMPOSITIONS FOR SCREEN PRINTING OF TEXTILES

(57) Abstract: Plastisol ink compositions are disclosed containing (meth)acrylate polymer, non-phthalate ester plasticizers, and optionally, pigment, filler, thixotropic agent, and other additives. The plasticizers are separated into lower and higher solvating plasticizers, and the composition for handling and storage is separated into two masterbatches with the (meth)acrylate polymer mixed with the lower solvating plasticizer. The plastisol can be used an ink of various colors for use in application to textiles. The plastisol ink compositions avoid polyvinyl chloride polymer resins and phthalate plasticizers conventionally employed in plastisol inks.



WO 2012/151202 A3

A. CLASSIFICATION OF SUBJECT MATTER*C09D 11/00(2006.01)i, C09D 11/10(2006.01)i, B41M 1/00(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)

C09D 11/00; C08L 33/06; C09K 3/10; B65D 41/04; C09D 11/02; C08K 5/103; B32B 37/02; C08J 5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: plastisol ink, two different masterbatches, acrylic resin, non-phthalate ester plasticizer, solubility parameter, 2,2,4-trimethyl-1,3-pentanediol dibenzoate, diethylene glycol dibenzoate, screen printing, excellent storage stability, excellent mechanical properties

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| A | US 2009-0260752 A1 (KASAI TOSHIHIRO et al.) 22 October 2009 See paragraphs [0002]-[0012], [0028]-[0037], and [0053]-[0058]. | 1-3,6-8 |
| A | JP 2004-083665 A (ZEON KASEI CO., LTD. et al.) 18 March 2004 See claims 1-4. | 1-3,6-8 |
| A | JP 10-231409 A (DAINIPPON INK & CHEM INC.) 02 September 1998 See claims 1-4. | 1-3,6-8 |
| A | JP 2002-060728 A (DAIWA CAN CO., LTD. et al.) 26 February 2002 See claim 1. | 1-3,6-8 |
| A | JP 2007-224200 A (DAINIPPON INK & CHEM INC.) 06 September 2007 See claims 1-12. | 1-3,6-8 |

 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 application or patent 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 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

Date of the actual completion of the international search

19 OCTOBER 2012 (19.10.2012)

Date of mailing of the international search report

23 OCTOBER 2012 (23.10.2012)

Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORTInternational application No.
PCT/US2012/035985**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.: 10-13, 16
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:

The claims refer to unsearchable claims which do not comply with PCT Rule 6.4(a). Thus, it is not possible to make meaningful search regarding claims 10-13 and 16.

3. Claims Nos.: 4-5, 9, 14-15
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:

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.:

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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/035985

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|---|--|
| US 2009-0260752 A1 | 22.10.2009 | CN 100402601 C0 CN 1829770 A0 EP 1652883 A1 JP 4951239 B2 US 2007-0191535 A1 WO 2005-010095 A1 | 16.07.2008 06.09.2006 03.05.2006 13.06.2012 16.08.2007 03.02.2005 |
| JP 2004-083665 A | 18.03.2004 | None | |
| JP 10-231409 A | 02.09.1998 | None | |
| JP 2002-060728 A | 26.02.2002 | JP 3886708 B2 | 28.02.2007 |
| JP 2007-224200 A | 06.09.2007 | None | |