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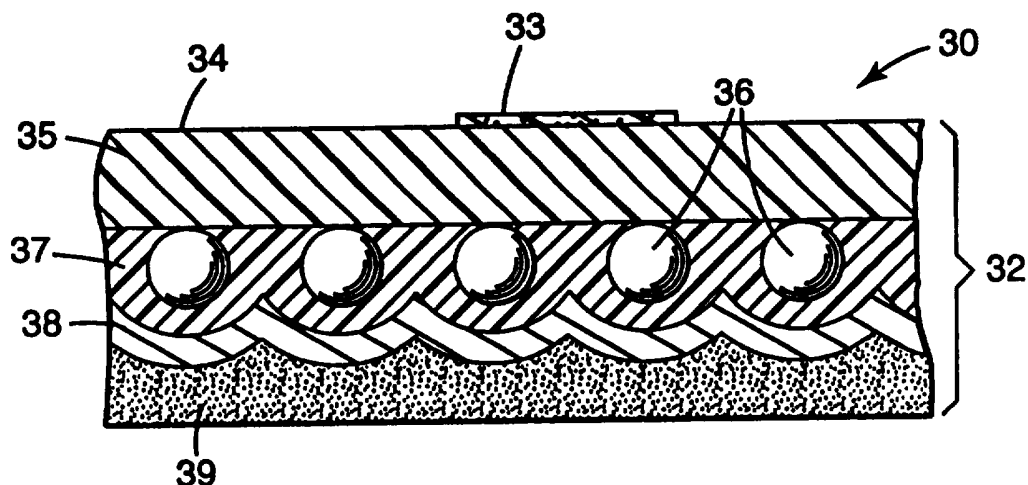
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification⁶: C08L 75/14, 23/08, B44C 1/17, B41M 7/00, 1/30, C09D 11/10, G09F 13/16, B60R 13/10	A3	(11) International Publication Number: WO 97/05200 (43) International Publication Date: 13 February 1997 (13.02.97)
(21) International Application Number: PCT/US96/12180 (22) International Filing Date: 25 July 1996 (25.07.96) (30) Priority Data: 60/001,539 26 July 1995 (26.07.95) US (71) Applicant: MINNESOTA MINING AND MANUFACTURING COMPANY [US/US]; 3M Center, P.O. Box 33427, Saint Paul, MN 55133-3427 (US). (72) Inventors: CHRISTIAN, Paul, D.; P.O. Box 33427, Saint Paul, MN 55133-3427 (US). PHILLIPS, Nancy, H.; P.O. Box 33427, Saint Paul, MN 55133-3427 (US). (74) Agents: JORDAN, Robert, H. et al.; Minnesota Mining and Manufacturing Company, Office of Intellectual Property Counsel, P.O. Box 33427, Saint Paul, MN 55133-3427 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 27 March 1997 (27.03.97)

(54) Title: RADIATION-CROSSLINKABLE THERMOPLASTIC COMPOSITION AND ITS USE IN MAKING GRAPHIC ARTICLES

(57) Abstract

Thermal transfer articles of the invention comprising a carrier, optionally a release layer, a color layer releasably adhered thereto, and optionally an adherence layer on the bottom side of the color layer. Also graphic imaging compositions and methods for thermal transfer using such articles and compositions and graphic articles made by such methods. The transfer articles 1) exhibit thermoplastic, low cohesive properties during transfer such that good image resolution and transfer is achieved and 2) are radiation cross-linked after transfer such that a durable image is formed.



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 96/12180

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C08L75/14 C08L23/08 B44C1/17 B41M7/00 B41M1/30
C09D11/10 G09F13/16 B60R13/10

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 6 C08L B44C G09F B60R B41M 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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 261 221 A (SANYO CHEMICAL INDUSTRIES LTD) 12 May 1993 see the whole document ---	1,2,5
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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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

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* & * document member of the same patent family

Date of the actual completion of the international search

31 January 1997

Date of mailing of the international search report

19.02.97

Name and mailing address of the ISA

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Doolan, G

INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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X	US 4 551 360 A (MASAYUKI KAWAJIRI) 5 November 1985 see column 1, line 31 - column 3, line 46; examples 1,2	15,22,30
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 96/ 12180

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:

- | | |
|---------------------|---|
| 1. CLAIMS 1-5 | Radiation-crosslinkable thermoplastic composition |
| 2. CLAIMS 6,10-14 | Thermal transfer article |
| 3. CLAIMS 7,15-28 | Graphic article |
| 4. CLAIMS 8-9,29-30 | Method for making a graphic article |

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.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 96/12180

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