

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
12 February 2004 (12.02.2004)

PCT

(10) International Publication Number
WO 2004/013231 A3

(51) International Patent Classification⁷: **C09D 11/10**,
C08L 25/04, 31/04, 33/02, 67/00, 69/00, G02C 7/02, 7/04

(21) International Application Number:
PCT/US2003/024609

(22) International Filing Date: 5 August 2003 (05.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/401,264 5 August 2002 (05.08.2002) US

(71) Applicant (for all designated States except US): **VISION-
EASE LENS, INC.** [US/US]; 7000 Sunwood Drive NW,
Ramsey, MN 55303 (US).

(71) Applicant and

(72) Inventor: **HAGE, Martin, L.** [US/US]; 10231 Yorktown
Lane, Maple Grove, MN 55369 (US).

(74) Agents: **INSKEEP, James, W.** et al.; Inskeep Intellectual
Property Group, Inc., 1225 W. 190th, Ste. 205, Gardena,
CA 90248 (US).

(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, 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:
13 May 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.



WO 2004/013231 A3

(54) Title: WATERBORNE OPHTHALMIC LENS INK

(57) Abstract: This patent application discloses a waterborne ink for printing marks on ophthalmic lenses, and a process for applying the ink to various coated or uncoated surfaces, especially the surfaces of polycarbonate lenses. The ink produces marks that are free of any ghost images after the removal of the ink. The ink includes preferably an acrylic polymer, a coloring agent, and preferably further includes at least one surfactant as a wetting agent.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/24609

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : C09D 11/10; C08L 25/04, 31/04, 33/02, 67/00, 69/00; G02C 7/02, 7/04		
US CL : 523/160; 524/556, 563, 577, 590, 601; 351/159, 162		
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)		
U.S. : 523/160, 161; 524/556, 563, 577, 590, 601; 351/159, 162; 106/31.27, 31.28, 31.60		
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)		
Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 61-017101 A (TORAY IND. INC.) 25 January 1986 (25/01/86), abstract.	1, 13
X	JP 60-023092 A (HOYA LENS CO. LTD.) 05 February 1985 (05/02/85), abstract.	1, 13
X	EP 0472496 A2 (CIBA-GEIGY AG) 26 February 1992 (26/02/92), col.3, line 19-col.4, line 5 and col.4, lines 24-28.	1, 10, 13
X	JP 08-112566 A (SEIKO-EPSON CO. LTD.) 07 May 1996 (07/05/96), claim 1, paragraphs 16-17, 19-20, 22, and 35.	1, 10, 13-16
X	US 5,352,245 A (SU et al.) 04 October 1994 (04/10/94), col.1, lines 51-64 and col.2, lines 36-52 and 55-56.	1, 13
---		-----
Y		10-12
X	US 6,315,410 B1 (DOSHI) 13 November 2001 (13/11/2001), col.3, lines 45-49, col.5, lines 18-20, 36-42, and 55-58, col.7, lines 66-67, col.8, lines 43-48, col.11, line 67-col.12, line 9, col.13, lines 26-29 and 35-45, and col.26, lines 8-22.	1, 9, 13-16
---		-----
Y		2, 6-8, 10-12
X	US 2002/0017219 A1 (YAMAZAKI et al.) 14 February 2002 (14/02/2002), paragraphs 17, 24, 30, 33-34, and 42-45.	1-3, 7-9, 14-16
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 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" "X" "Y" "&"	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 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 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		Date of mailing of the international search report
30 January 2004 (30.01.2004)		18 FEB 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Callie Shosho <i>CS</i> Telephone No. 703-308-0661 <i>for</i>

INTERNATIONAL SEARCH REPORT

PCT/US03/24

Continuation of B. FIELDS SEARCHED Item 3:

EAST:

search terms: ophthalmic ink, plastic lens, eyeglass, contact lens, ink, pigment, dye, binder, surfactant, perfluorinated surfactant, acetylenic alcohol, coupling tail solvent, base, neutralizer, hydroxide, emulsion, dispersion, polyurethane, polyester, alkyd, corona discharge

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,281,468 B1 (SOUEL et al.) 28 August 2001 (28/08/2001), col.1, lines 54-50 and col.5, lines 18-23.	12
Y	US 5,948,155 A (YUI et al.) 07 September 1999 (07/09/99), col.6, lines 59-64 and col.7, lines 17-18, 24, and 26-27.	2, 6, 8
A	US 4,238,524 A (LALIBERTE et al.) 09 December 1980 (09/12/80)	1
A	JP 10-264494 A (SEIKO EPSON CORP.) 06 October 1998 (06/10/98)	1