

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
21 December 2000 (21.12.2000)

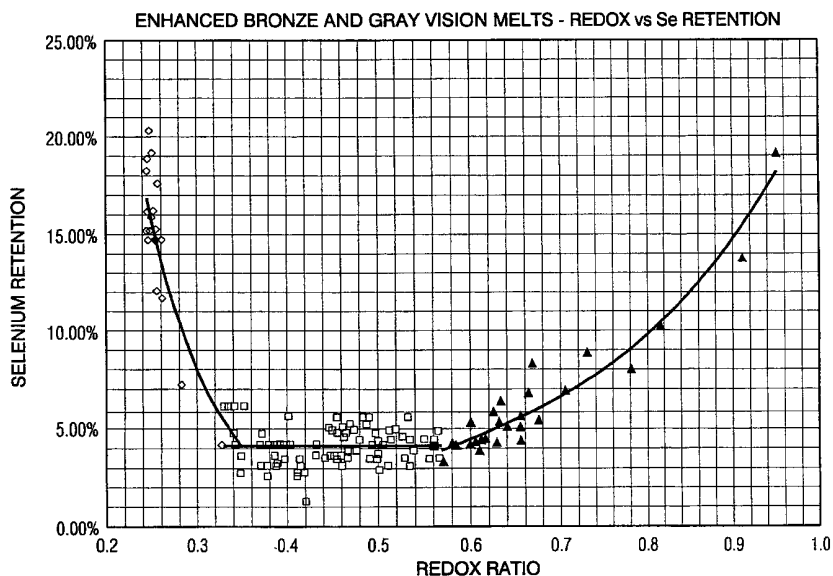
PCT

(10) International Publication Number  
**WO 00/76928 A3**

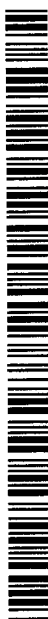
- (51) International Patent Classification<sup>7</sup>: C03C 3/087, 4/02, 4/08, 1/10, G01J 3/46
- (74) Agents: STACHEL, Kenneth, J.; PPG Industries, Inc., One PPG Place, Pittsburgh, PA 15272 et al. (US).
- (21) International Application Number: PCT/US00/16153
- (81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (22) International Filing Date: 9 June 2000 (09.06.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/138,899 11 June 1999 (11.06.1999) US  
60/144,552 16 July 1999 (16.07.1999) US  
09/591,573 9 June 2000 (09.06.2000) US
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
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- Published:  
— with international search report
- (88) Date of publication of the international search report:  
11 October 2001

[Continued on next page]

(54) Title: COLORED GLASS COMPOSITIONS AND AUTOMOTIVE VISION PANELS WITH REDUCED TRANSMITTED COLOR SHIFT



(57) Abstract: A neutral gray colored glass composition for automobile vision panels having reduced transmitted color shift characteristics is provided. The glass composition has a base portion including 65 to 75 weight percent SiO<sub>2</sub>, 10 to 20 weight percent of Na<sub>2</sub>O, 5 to 15 weight percent CaO, 0 to 5 weight percent MgO, 0 to 5 weight percent Al<sub>2</sub>O<sub>3</sub>, and 0 to 5 weight percent K<sub>2</sub>O. The composition also includes major colorants including 0.30 to 0.70 weight percent Fe<sub>2</sub>O<sub>3</sub>, 0 to 15 ppm CoO, and 1 to 15 ppm Se. The glass has a luminous transmittance of at least 65 percent at a thickness of 3.9 mm, a redox ratio of 0.2 to 0.675, a TSET of less than or equal to 65 percent, and a standard color shift of less than 6.



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*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.*

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 00/16153

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 C03C3/087 C03C4/02 C03C4/08 C03C1/10 G01J3/46

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 7 C03C G01J

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, INSPEC, COMPENDEX, IBM-TDB, PAJ, 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	EP 0 653 386 A (PPG INDUSTRIES INC) 17 May 1995 (1995-05-17) claims ---	1-25, 28-31
X	EP 0 653 388 A (PPG INDUSTRIES INC) 17 May 1995 (1995-05-17) claims; examples ---	1-25, 28-31
X	US 5 837 629 A (COMBES JEAN-MARIE ET AL) 17 November 1998 (1998-11-17) column 6, line 36 - line 55 ---	1-25, 28-31
X	EP 0 677 492 A (FORD MOTOR CO) 18 October 1995 (1995-10-18) table IV ---	1-25, 28-31
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Further documents are listed in the continuation of box C.       Patent family members are listed in annex.

\* Special categories of cited documents :

<p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p>	<p>*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</p> <p>*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</p> <p>*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.</p> <p>*&amp;* document member of the same patent family</p>
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Date of the actual completion of the international search  <b>2 February 2001</b>	Date of mailing of the international search report  <b>09.03.01</b>
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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  <b>Thomas, R.M.</b>
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International Application No  
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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.
A	EP 0 736 499 A (PPG INDUSTRIES INC) 9 October 1996 (1996-10-09) claims ----	1-25, 28-31
A	EP 0 790 219 A (ASAHI GLASS CO LTD) 20 August 1997 (1997-08-20) claims ----	1-25, 28-31
X	EP 0 452 207 A (SAINT GOBAIN VITRAGE) 16 October 1991 (1991-10-16) claims 1,2 ----	32-36
X	EP 0 482 535 A (PPG INDUSTRIES INC) 29 April 1992 (1992-04-29) page 4, line 34 - line 44 ----	32-36
X	US 5 582 455 A (CASARIEGO PEDRO A ET AL) 10 December 1996 (1996-12-10) column 2, line 1 - line 32 ----	32-36
X	WO 99 20577 A (PPG IND OHIO INC) 29 April 1999 (1999-04-29) abstract ----	1-25, 29-36
X	EP 0 803 479 A (ASAHI GLASS CO LTD) 29 October 1997 (1997-10-29) tables 1-5 ----	32-36
A	P. POLATO ET AL.: "Glazing solar parameters evaluated by ISO, CEN and ASTM standard procedures" GLASS SCIENCE AND TECHNOLOGY (GLASTECHNISCHE BERICHTE)., vol. 69, no. 5, 1996, pages 131-139, XP000587376 DEUTSCHE GLASTECHNISCHE GESELLSCHAFT., DE ISSN: 0017-1085 page 131, left-hand column, paragraph 1 -right-hand column, line 10 page 135, left-hand column, last paragraph -right-hand column, line 28 page 137, right-hand column, last paragraph -page 138, left-hand column, line 24 figure 6; table 10 ----	26
A	WO 96 42008 A (MEASUREX) 27 December 1996 (1996-12-27) page 17, paragraph 1 page 21, line 4 -page 22, line 9 page 31, line 22 - line 25 page 32, last paragraph -page 33, line 15 figure 1 ----- -/--	26

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International Application No

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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/US 00/16153

## 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.:

### 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: 1-25,28-31

neutral gray glass, being a soda-lime-silica glass with a certain colorant portion added and products made of this composition.

2. Claims: 26,27

a method of evaluating a transmitted color shift.

3. Claims: 32-36

a method of producing selenium containing glass

# INTERNATIONAL SEARCH REPORT

Information on patent family members

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