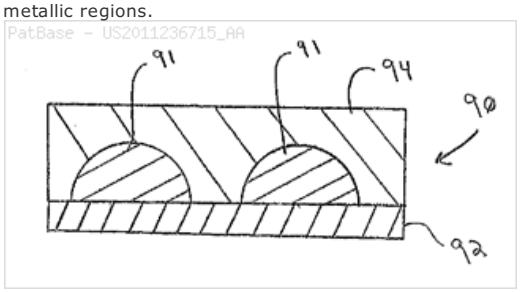
1) Family number: 49654024 (US2011236715A)

Title: SOLAR CONTROL COATINGS WITH DISCONTINUOUS METAL LAYER

Abstract: An architectural transparency includes a substrate, a first dielectric layer formed over at least a portion of the substrate, a continuous metallic layer formed over at least a portion of the first dielectric layer, a second dielectric layer formed over at least a portion of the first metallic layer, and a subcritical metallic layer formed over at least a portion of the second dielectric layer such that the subcritical metallic layer forms discontinuous metallic regions.

Classifications:
International (IPC 8-9): B32B15/04 B32B15/08 B32B17/06 B32B3/10 B32B7/00 C03B33/02 C03C C03C17/36 C09D1/00 (Advanced/Invention); C03C17/36 (Core/Invention); C03C (Subclass/Invention)
CPC: C03B33/02 C03C17/3644 C03C17/3681 Y10T83/04 Y10T428/24868 C03C17/36 C03C17/3618 C03C17/3639 C03C17/366 C03C2217/42 Y10T428/12542 Y10T428/12549 Y10T428/24851 Y10T428/24917
European: C03C17/36 C03C17/36B320 C03C17/36B339 C03C17/36B352L M03C217/420
US: 428/201 428/201S 428/203 428/209 428/209S 428/426 428/432 428/433 428/434 428/622 428/622S 428/623 428/623P 428/689 428/699 428/701 428/702 83/13



Family:

Publication number	Publication date	Application number	Application date
AU2011235302 AA	20111006	AU20110235302	20110329
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BR112012024473 A2	20160531	BR20121124473	20110329
CA2790452 AA	20111006	CA20112790452	20110329
CA2790452 C	20150616	CA20112790452	20110329
CN102811966 A	20121205	CN201180014150	20110329
CN105143135 A	20151209	CN201480022387	20140311
CN108249780 A	20180706	CN201810265374	20110329
CO6571862 A2	20121130	CO20120163273	20120920
DE602011030734 D1	20161110	DE201160030734T	20110329
EP2552846 A1	20130206	EP20110713142	20110329
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EP2969992 A1	20160120	EP20140719134	20140311
EP3124450 A1	20170201	EP20160189418	20110329
ES2600887 T3	20170213	ES20110713142T	20110329
HU032357 T2	20170928	HU20110713142T	20110329
IN08234DN2015 A	20160715	IN2015DN08234	20150911
IN08263DN2012 A	20140321	IN2012DN08263	20120921
JP2013523494 T2	20130617	JP20130502707T	20110329
JP5705963 B2	20150422	JP20130502707T	20110329
KR101464847 B1	20141125	KR20127027915	20110329
KR101809341 B1	20171214	KR20157024569	20140311
KR101908881 B1	20181016	KR20177035193	20140311
KR20130002337 A	20130107	KR20127027915	20110329
KR20150119061 A	20151023	KR20157024569	20140311
KR20170026654 A	20170308	KR20177005637	20140311
KR20170138589 A	20171215	KR20177035193	20140311
MA34086 B1	20130305	MA20120035243	20120924
MX2012011201 A1	20121106	MX20120011201	20110329
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MY160915 A	20170331	MY20120004226	20110329
PL2552846 T3	20170428	PL20110713142T	20110329
RU2012145869 A	20140510	RU20120145869	20110329
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SG184175 A1	20121030	SG20120069894	20110329
TH129221 A	20131114	TH20121005069	20110329
TR201615714 T4	20161221	TR20160015714T	20110329
US2011236715 AA	20110929	US20110072866	20110328
US2014193616 AA	20140710	US20140204392	20140311
US2015191393 AA	20150709	US20140519268	20141021
US2018148371 AA	20180531	US20170842118	20171214
US8865325 BB	20141021	US20140204392	20140311
US9604875 BB	20170328	US20140519268	20141021
US9932267 BB	20180403	US20110072866	20110328
US10358384 BB	20190723	US20170842118	20171214

WO11123402 A1	20111006	WO2011US30235	20110329
WO14164695 A1	20141009	WO2014US23240	20140311
ZA201206299 A	20140129	ZA20120006299	20120821

Priority:

US20100318471P 20100329
EP20110713142 20110329
US20140204392 20140311
US20170842118 20171214
US20110072866 20110328
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WO2014US23240 20140311
CN201180014150 20110329
US20130777163P 20130312
US20140519268 20141021

Probable Assignee: VITRO FLAT GLASS LLC

Assignee(s): (std): BENIGNI JEFFREY A ; BHANDARI ABHINAV ; BUHAY HARRY ; FINLEY JAMES J ; PPG IND OHIO INC ; OHODNICKI JR PAUL R ; OSHAUGHNESSY DENNIS J ; MEDWICK PAUL A ; POLCYN ADAM D ; WAGNER ANDREW V ; THIEL JAMES P ; VITRO S A B DE C V

Assignee(s): VITRO FLAT GLASS LLC ; VITRO SAB DE CV ; PPG INDASTRIZ OGAJO INK ; PPG INDUSTRIES OHIO INC ; OHODNICKI PAUL R JR ; O SHAUGHNESSY DENNIS J

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Inventor(s): ABHINAV BHANDARI ; POLCYN ADAM D PITTSBURGH ; WAGNER ANDREW V PITTSBURGH ; OHODNICKI JR PAUL R ALLISON PARK ; THIEL JAMES P PITTSBURGH ; ANDREW V WAGNER ; ADAM D POLCYN ; BUHAY HARRY ALLISON PARK ; BHANDARI ABHINAV CRANBERRY ; BENIGNI JEFFREY A MCGRANN ; PAUL A MEDWICK ; PAUL R OHODNICKI JR ; JR PAUL R OHODNICKI ; JAMES P THIEL ; JEFFREY A BENIGNI ; HARRY BUHAY ; JAMES J FINLEY ; DENNIS J OSHAUGHNESSY ; DENNIS J O SHAUGHNESSY ; FINLEY JAMES J PITTSBURGH ; O SHAUGHNESSY DENNIS J ALLISON PARK ; MEDWICK PAUL A ALLISON PARK ; O'SHAUGHNESSY DENNIS J

Agent(s): KING AND WOOD MALLESONS; MINTER ELLISON; BORDEN LADNER GERVAIS LLP; ALICIA LLOREDA RICAURTE; FLEISCHER ENGELS AND PARTNER MBB PATENTANWAELTE; Polypatent; F AND E PATENT; VALLEJO JUAN PEDRO; ASAMURA PATENT OFFICE PC; ERDEM KAYA; ANDREW C; WEBB LAW FIRM; SIMINERIO ANDREW C ET AL; FORTNEY LESTER N ET AL

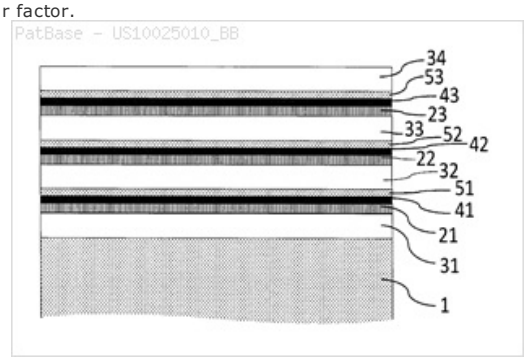
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

2) Family number: 50016099 (US2013057951A)

Title: SOLAR CONTROL GLAZING WITH LOW SOLAR FACTOR

Abstract: The present invention relates to a substrate carrying a multilayer solar control stack, as well as to a multiple glazing incorporating at least one such sheet of glassy material carrying a solar control stack. The multilayer solar control stack comprises at least n functional layers based on a material which reflects infrared radiation and (n+1) transparent dielectric coatings such that each functional layer is surrounded by transparent dielectric coatings, n being greater than or equal to 3. The stack comprises at least one layer of metallic nature absorbing in the radiation which is visible inside the stack. The invention applies particularly to the formation of solar control glazings with low solar factor.

Classifications:
International (IPC 8-9): A47J B32B17/10 C03C17/36 C23C14/06 G02B5/08 G02B5/20 G02B5/22 G02B5/26 G02B5/28 (Advanced/Invention); G02B5/20 (Core/Invention)
International (IPC 1-7): B32B17/10 C03C17/36 G02B5/08 G02B5/20 G02B5/22 G02B5/26
CPC: G02B5/208 C03C17/36 C03C17/3613 C03C17/3626 C03C17/3639 C03C17/3644 C03C17/3647 C03C17/3652 C03C17/366 C03C17/3681 G02B5/0858
European: C03C17/36 C03C17/36B316 C03C17/36B332 C03C17/36B339 C03C17/36B342 C03C17/36B343 C03C17/36B346 C03C17/36B352L C03C17/36B356 G02B5/08M2S G02B5/20V
US: 359/359



Family:

Publication number	Publication date	Application number	Application date
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BE1019345 AD	20120605	BE20100000310	20100525
BR112012030033 A2	20160802	BR20121130033	20110525
CA2800252 AA	20121120	CA20112800252	20110525
CN102918433 A	20130206	CN201180025796	20110525
CN102918433 B	20171027	CN201180025796	20110525
EA025674 B1	20170130	EA20120091341	20110525
EA201291341 A1	20130628	EA20120091341	20110525
EP2577368 A1	20130410	EP20110723911	20110525
IN10235DN2012 A	20160318	IN2012DN10235	20121123
JP2013532306 T2	20130815	JP20130511668T	20110525
JP5864555 B2	20160217	JP20130511668T	20110525

MX2012013662 A1	20130501	MX20120013662	20110525
SG185710 A1	20121228	SG20120086104	20110525
TH164229 A	20170706	TH20131003469	20110525
US2013057951 AA	20130307	US20110696911	20110525
US10025010 BB	20180717	US20110696911	20110525
WO11147864 A1	20111201	WO2011EP58540	20110525

Priority:

BE20100000310 20100525 WO2011EP58540 20110525

Probable Assignee: AGC GLASS EUROPE

Assignee(s): (std): AGC GLASS EUROPE ; HEVESI KADOSA ; SICHA JAN

Assignee(s): AGC GLASS EUROPE SA

Inventor(s): (std): HEVESI KADOSA ; SICHA JAN

Inventor(s): JAN SICHA ; KADOSA HEVESI

Agent(s): FB RICE; FB RICE PTY LTD; NORTON ROSE CANADA SENCRL SRL LLP; LARANGE FRANCOISE; OBLON MCCLELLAND MAIER AND NEUSTADT LLP; LE VAGUERESE SYLVAIN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

3) Family number: 50610101 (US2012033287A)

Title: MULTI-PANE ELECTROCHROMIC WINDOWS

Abstract: Window units, for example insulating glass units (IGU's), that have at least two panes, each pane having an electrochromic device thereon, are described. Two optical state devices on each pane of a dual-pane window unit provide window units having four optical states. Window units described allow the end user a greater choice of how much light is transmitted through the electrochromic window. Also, by using two or more window panes, each with its own electrochromic device, registered in a window unit, visual defects in any of the individual devices are negated by virtue of the extremely small likelihood that any of the visual defects will align perfectly and thus be observable to the user.

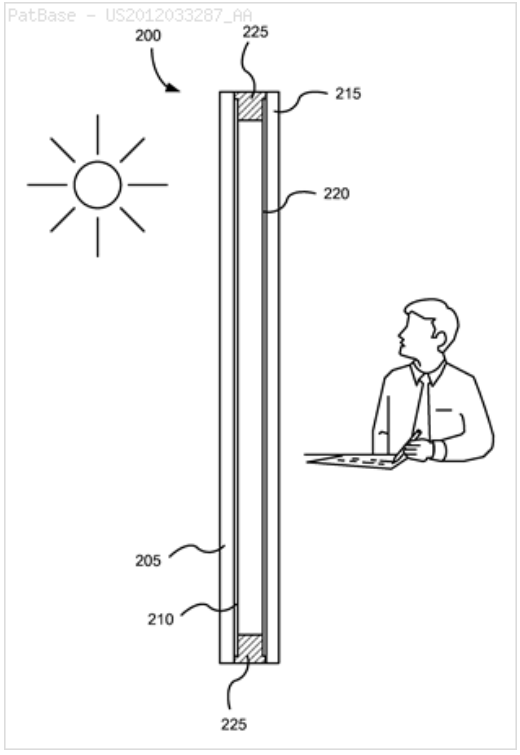
Classifications:

International (IPC 8-9): B32B17/00 C03C17/34 C03C17/36 E06B3/66 E06B7/28 E06B9/24 E06B9/264 G02B26/00 G02F G02F1/1347 G02F1/15 G02F1/153 G02F1/155 G02F1/157 G02F1/161
H05B3/86 (Advanced/Invention);
E06B9/264 (Advanced/Non-invention)

CPC: C03C17/34 C03C17/36 C03C17/3657 C03C17/3681 E06B9/24 E06B2009/2464 E06B2009/2643 H05B3/86 H05B2203/013 G02F1/153 G02F1/155 G02F2001/1555 G02F1/1347 G02F1/161 G02F1/157 E06B7/28 G02F1/1523

European: C03C17/34 C03C17/36 C03C17/36B352 C03C17/36B356 H05B3/86 T05B203/013

US: 1/1 156/107 156/107S 29/428 359/259 359/265 359/273 359/275 359/275P 359/296



Family:

Publication number	Publication date	Application number	Application date
CN103168269 A	20130619	CN201180045191	20110729
CN103168269 B	20170412	CN201180045191	20110729
CN107357107 A	20171117	CN201710167066	20110729
EP2601555 A1	20130612	EP20110815114	20110729
EP2601555 A4	20160323	EP20110815114	20110729
HK1186254 A1	20140307	HK20130113735	20131210
TW201215981 A	20120416	TW20110127806	20110804
TW201715284 A	20170501	TW20170103396	20110804
TW201921074 A	20190601	TW20180128624	20110804
TWI582508 B	20170511	TW20110127806	20110804

TWI636312 B	20180921	TW20170103396	20110804
US2012033287 AA	20120209	US20100851514	20100805
US2013021659 AA	20130124	US20120619772	20120914
US2014307301 AA	20141016	US20140160425	20140121
US2015062688 AA	20150305	US20140534059	20141105
US2015316827 AA	20151105	US20150796819	20150710
US2016154289 AA	20160602	US20160013905	20160202
US2018373110 AA	20181227	US20180122778	20180905
US8270059 BB	20120918	US20100851514	20100805
US8665512 BB	20140304	US20120619772	20120914
US8908259 BB	20141209	US20140160425	20140121
US9116410 BB	20150825	US20140534059	20141105
US9829763 BB	20171128	US20160013905	20160202
US10088731 BB	20181002	US20150796819	20150710
WO12018688 A1	20120209	WO2011US45923	20110729

Priority:

US20100851514 20100805 CN201180045191 20110729 WO2011US45923 20110729
US20120619772 20120914 US20140160425 20140121 US20140534059 20141105
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Probable Assignee: VIEW INC

Assignee(s): (std): FRIEDMAN ROBIN ; KAILASAM SRIDHAR ; MULPURI RAO ; POWELL RON ; SOLADIGM INC ; SHRIVASTAVA DHAIRYA ; VIEW INC

Assignee(s): BANK OF NEW YORK MELLON TRUST CO NA ; BANK OF NEW YORK MELLON TRUST CO NA COLLATERAL AGENT AS

Inventor(s): (std): MULPURI RAO ; FRIEDMAN ROBIN ; POWELL RON ; SHRIVASTAVA DHAIRYA ; KAILASAM SRIDHAR ; KAILASAM SRIDHAR K ; POWELL RONALD A ; POWELL RONALD

Agent(s): JOHNSTON MAGNUS GEORGE; ELLA CHEONG HONG KONG LTD; WEAVER AUSTIN VILLENEUVE AND SAMPSON LLP; BRIAN D; GRIEDEL BRIAN D; GRIEDEL BRIAN D ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

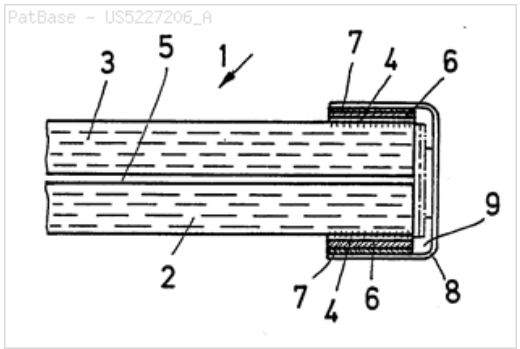
4) Family number: 42622109 (US5227206A)

Title: PROCESS FOR COATING OF A SURFACE MADE OF GLASS

Abstract: PCT No. PCT/CH90/00172 Sec. 371 Date Mar. 18, 1991 Sec. 102(e) Date Mar. 18, 1991 PCT Filed Jul. 16, 1990 PCT Pub. No. WO91/01429 PCT Pub. Date Feb. 7, 1991.For coating the glass edge of two wall elements (2, 3) forming interspace (5) for heat insulating structural and/or light element (1), metallic adhesive layer (4) is produced with the use of a physical (PVD) or chemical (CVD) deposition of the coating material from a gas or vapor phase on one side of each wall element (2, 3). On this adhesive layer (4) barrier layer (6) protecting the latter is deposited and the barrier layer is provided with subsequent solder layer (7). These solder layers (7) are bonded with sheet (8) that edges structural and/or light element (1) on the edge in a gastight manner.

Classifications:

International (IPC 8-9): B23K1/015 C03C17/00 C03C17/09 C03C17/36 C03C27/12 E06B3/66 E06B3/663 (Advanced/Invention); C03C17/00 C03C17/36 (Advanced/Non-invention); B23K1/012 C03C17/00 C03C17/06 C03C17/36 C03C27/12 E06B3/66 (Core/Invention)
International (IPC 1-7): C03C17/00 C03C17/09 C03C17/36 C03C27/06 C03C27/12 C23C14/14 E04C2/54 E06B3/24 E06B3/66
CPC: Y10T428/24777 Y02A30/25 E06B3/66357 B23K1/015 C03C17/36 C03C17/3615 C03C17/3642 C03C17/3652 C03C17/3681 E06B3/6612 E06B3/66342 E06B2003/66395 Y02B80/24
European: B23K1/015 C03C17/36 C03C17/36B318 C03C17/36B340 C03C17/36B346 C03C17/36B356 E06B3/663B8 E06B3/663B8S E06B3/66D P06B3/663B402 P06B3/663B8S Y02B80/24
US: 156/107 156/109 427/165 427/168 427/266 427/284 428/192 428/34 52/786.1 52/788



Family:

Publication number	Publication date	Application number	Application date
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AU647400 B2	19940324	AU19900059357	19900716
CH685995 A	19951130	CH19890003076	19890824
CH686674 A	19960531	CH19890002650	19890716
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DK0434802 T3	19940801	DK19900910093T	19900716
EP0434802 A1	19910703	EP19900910093	19900716
EP0434802 B1	19940323	EP19900910093	19900716
FI911206 A0	19910312	FI19910001206	19910312
FI95959 B	19951229	FI19910001206	19910312
FI95959 C	19960410	FI19910001206	19910312
JP3044063 B2	20000522	JP19900509336T	19900716

JP4501554 T2	19920319	JP19900509336T	19900716
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US5227206 A	19930713	US19910656144	19910318
WO9101429 A1	19910207	WO1990CH00172	19900716

Priority:

CH19890002650 19890716 CH19890003076 19890824 WO1990CH00172 19900716
EP19900910093 19900716

Probable Assignee: EMIL B CHLI

Assignee(s): (std): B CHLI EMIL ; BAECHLI EMIL ; BOCHLI EMIL ; CHLI EMIL B

Assignee(s): EMIL B CHLI ; BAECHLI EMIL ENDINGEN AARGAU CH ; BACHLI EMIL

Inventor(s): (std): BACHLI EMIL ; BOCHLI EMIL ; B CHLI EMIL ; BAECHLI EMIL

Inventor(s): EMIL BAECHLI ; BAECHLI EMIL ENDINGEN AARGAU CH

Agent(s): GRIFFITH HACK

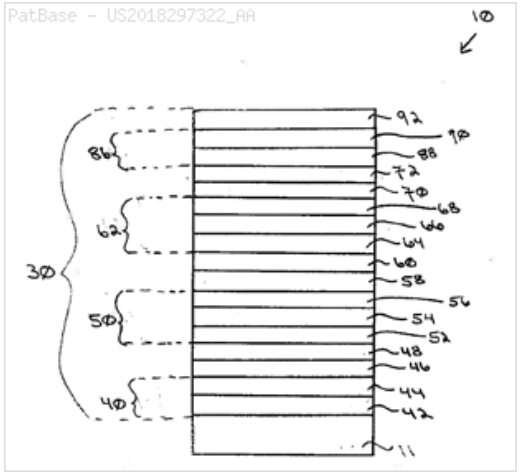
Designated states: AT AU BE CH DE DK ES FI FR GB IT JP LI LU NL NO SE US

5) Family number: 71541139 (US2018297322A)

Title: SOLAR CONTROL COATING FOR LAMINATED GLAZING

Abstract: A laminated glazing having a first ply connected to a second ply by a polymeric interlayer; and a solar control coating located on at least one of the major surfaces thereof, the solar control coating including: a first phase adjustment layer; a first metallic layer located over the first phase adjustment layer; a first primer layer located over the first metallic layer; a second phase adjustment layer located over the first primer layer; a second metallic layer located over the second phase adjustment layer; a second primer layer located over the second metallic layer; a third phase adjustment layer located over the second primer layer; a third metallic layer located over the third phase adjustment layer; a third primer layer located over the third metallic layer; a fourth phase adjustment layer located over the third primer layer; and a protective layer located over the fourth phase adjustment layer.

Classifications:
International (IPC 8-9): B32B15/04 B32B17/10 B32B18/00 B32B33/00 B32B7/02 C03C17/36 G02B5/28 G02F1/00 G02F1/01 (Advanced/Invention)
CPC: B32B7/02 B82Y30/00 B32B18/00 B32B33/00 G02B5/285 G02F1/0063 G02F1/0102 B32B2250/05 B32B2250/42 B32B2307/204 B32B2307/412 B32B2307/416 B32B2307/418 B32B2309/105 B32B2311/02 B32B2313/02 B32B2315/02 B32B2551/00 B32B15/04 B32B17/10036 B32B17/10229 B32B17/10761 C03C17/366 G02B5/282 G02F2202/10 G02F2203/01 G02F2203/02 C03C17/36 C03C17/3639 C03C17/3644 C04B2237/704 C04B37/005 C04B37/008 C04B2237/06 C04B2237/062 C04B2237/064 C04B2237/068
US: 359/890



Family:

Publication number	Publication date	Application number	Application date
US2018297322 AA	20181018	US20180951079	20180411
WO18191481 A1	20181018	WO2018US27275	20180412

Priority:

US20170484508P 20170412 US20180951079 20180411

Probable Assignee: VITRO FLAT GLASS LLC

Assignee(s): (std): VITRO FLAT GLASS LLC

Inventor(s): (std): WAGNER ANDREW V ; BUCHANAN MICHAEL J ; WAGNER ANDREW ; BUCHANAN MICHAEL

Agent(s): FORTNEY LESTER ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

6) Family number: 1041209 (US3901997A)

Title: HEAT-REFLECTING GLASS SHEETS

Abstract: 1367590 Coating glass sheets FLACHGLAS AG DELOG-DETAG 15 Jan 1973 [28 Jan 1972] 2045/73 Heading C1M [Also in Division C7] A heat-reflecting glass sheet comprises a glass sheet having deposited thereon a layer of dielectric material of refractive index substantially equal to that of the glass sheet and substantially absorption-free for visible light, this layer itself being covered by a vacuum-deposited ZnS layer which is covered by a vacuumdeposited metal of high I.R. reflection capacity. The glass substrate, which may be float glass, may be glow-discharge cleaned before vacuum deposition of the first layer, which is a (mixed) metal oxide, glass or Si oxide deposited by electron-beam evaporation of SiO2 or reactive evaporation of SiO to a thickness of 30-100 ?; the ZnS layer may be 200-600 ?, and said metal is Ag, Cu, or preferably, Au; a subsequent layer of ZnS and/or Si oxide may be deposited. The pane may be used as half a double-glazing unit, the other sheet being clear glass facing the coated side of the pane.

Classifications:

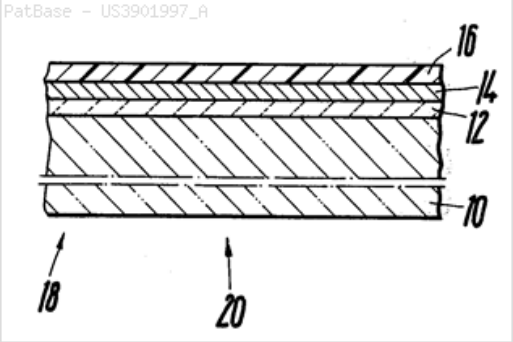
International (IPC 8-9): B22D11/10 B32B15/00 B32B17/06 C03C17/22 C03C17/36 C03C27/12 C23C14/06 C23C14/24 G02B1/10 G02B1/11 H02G11/00 (Advanced/Invention);
B22D11/10 B32B15/00 B32B17/06 C03C17/22 C03C17/36 C03C27/12 C23C14/06 G02B1/10 H02G11/00 (Core/Invention)

International (IPC 1-7): B22D11/10 B32B15/00 B32B17/06 C03C17/00 C03C17/06 C03C17/22 C03C27/12 C23C13/00 G02B1/10 G02B5/26 H02G11/00

CPC: Y10S428/918 C03C17/3618 C03C17/36 C03C17/3628 C03C17/3649 C03C17/366 C03C17/3681 C03C2217/73

European: C03C17/36 C03C17/36B320 C03C17/36B334 C03C17/36B344 C03C17/36B352L C03C17/36B356 M03C217/730

US: 359/360 427/160 427/163.4 427/166 427/167 427/250 427/404 428/428 428/469 428/918



Family:

Publication number	Publication date	Application number	Application date
AT320893 B	19750310	AT19720010934	19721221
BE794599 A	19730726		00000000
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CA967066 A1	19750506	CA19730161789	19730122
CH575889 A	19760531	CH19730001004	19730124
DE2203943 A1	19730712	DE19722203943	19720128
DE2203943 B1	19730712	DE19722203943	19720128
DE2203943 C2	19740221	DE19722203943	19720128
ES410799 A1	19751201	ES19730410799	19730119
FR2169356 A1	19730907	FR19730002891	19730126
FR2169356 B1	19760910	FR19730002891	19730126
GB1367590 A	19740918	GB19730002045	19730115
IT978408 A	19740920	IT19730019532	19730124
JP48084114 A2	19731108	JP19730008739	19730122
JP48098696 U1	19731121	JP19730012048U	19730129
JP53012470 Y1	19780404	JP19730012048U	19730129
JP53012470 Y2	19780404	JP19730012048U	19730129
JP53028049 B4	19780811	JP19730008739	19730122
JP945438 C3	19790330	JP19730008739	19730122
NL163025 B	19800215	NL19730001067	19730125
NL163025 C	19800715	NL19730001067	19730125
NL7301067 A	19730731	NL19730001067	19730125
US3901997 A	19750826	US19730325873	19730122
ZA7300287 A	19731031	ZA19730000287	19730115

Priority:

DE19722203943 19720128 JP19730012048U 19730129

Probable Assignee: FLACHGLAS DELOG DETAG 8510 FUERTH AG

Assignee(s): (std): FLACHGLAS DT AG ; FLACHGLAS AG ; DELOG DETAG FLACHGLAS AG

Assignee(s): FLACHGLAS A G ; FLACHGLAS A G DELOG DETAG ; DELOG DETAG ; FLACHGLAS AG DELOG DETAG ; FLACHGLAS AG DELOG DETAG 8510 FUERTH ; FLACHGLAS AG DELOG DETAG DT ; FLACHGLAS AKTIENGESELLSCHAFT DELOG DETAG ; FLACHGLAS AG DELOGDETAG ; FLACHGLAS AKTIENGESELLSCHAFT DELOG DETAG FUERTH BONDSREPUBLIEK DUITSLAND ; GROTH ROLF ; FLACHGLAS DELOG DETAG AG ; FLACHGLAS DELOG DETAG FUERTH BONDSREPUBLIEK DUITSLAND AG ; FLACHGLAS DELOG DETAG 8510 FUERTH AG ; FLACHGLAS DELOGDETAG AG ; FLACHGLAS DELOG DETAG DT AG

Inventor(s): (std): GROTH ROLF ; GROTH ROLF DR ; GROTH R

Inventor(s): GROTH ROLF DR 5810 WITTEN

7) Family number: 44856289 (US2011268941A)

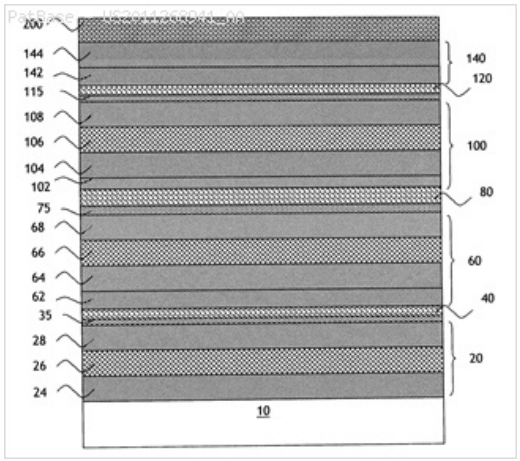
Title: PROCESS FOR MANUFACTURING SUBSTRATES PROVIDED WITH A MULTILAYER HAVING THERMAL PROPERTIES,IN PARTICULAR FOR PRODUCING HEATED GLAZING UNITS

Abstract: A process for manufacturing at least one substrate, especially transparent glass substrates, each provided with a thin-film multilayer comprising an alternation of "n" metallic functional layers especially of functional layers based on silver or a metal alloy containing silver, and of "(n+1)" antireflection coatings, with n being an integer ?3, each antireflection coating comprising at least one antireflection layer, so that each functional layer is positioned between two antireflection coatings, said thin-film multilayer being deposited by a vacuum technique, said multilayer being such that the thicknesses of two functional layers at least are different and the thicknesses of the functional layers have a symmetry within the multilayer relative to the center of the multilayer.

Classifications:

International (IPC 8-9): B32B B32B15/04 B32B17/00 B32B17/10

B32B7/02 C03C C03C17/36 C03C27/06 C23C14/06 C23C14/08 C23C14/14 C23C14/34 G02B G02B5/28 H01L H01L31/00 H05B H05B3/02 H05B3/84 H05B3/86 (Advanced/Invention);
B32B17/00 C03C17/36 H01L31/00 H05B3/86 (Advanced/Non-invention);
B32B17/06 C03C17/36 G02B5/28 H01L31/00 H05B3/02 H05B3/84 (Core/Invention);
B32B C03C G02B H01L H05B (Subclass/Invention)
International (IPC 1-7): B32B17/10
CPC: B32B17/10229 G02B5/282 B32B17/10036 B32B17/10174 C03C17/36 C03C17/3618 C03C17/3626 C03C17/3639 C03C17/366 C03C17/3671 C03C17/3681 H05B3/86 H05B2203/013 Y10T428/2495
European: B32B17/10C4 B32B17/10E10 C03C17/36 C03C17/36B320 C03C17/36B332 C03C17/36B339 C03C17/36B352L C03C17/36B354E C03C17/36B356 G02B5/28A1 H05B3/86 T05B203/013
US: 204/192.1 204/192.100S 428/213 428/213P



Family:

Publication number	Publication date	Application number	Application date
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CA2738225 AA	20100408	CA20092738225	20090930
CN102171034 A	20110831	CN200980138573	20090930
CN102171034 B	20150114	CN200980138573	20090930
EA201170518 A1	20111031	EA20110070518	20090930
EP2334495 A1	20110622	EP20090752430	20090930
FR2936510 A1	20100402	FR20080056575	20080930
IN01052KN2011 A	20110708	IN2011KN01052	20110310
JP2012504104 T2	20120216	JP20110529602T	20090930
JP5832896 B2	20151216	JP20110529602T	20090930
KR101654259 B1	20160905	KR20117006833	20090930
KR20110066921 A	20110617	KR20117006833	20090930
MX2011003220 A1	20110421	MX20110003220	20090930
US2011268941 AA	20111103	US20090121688	20090930
WO10037968 A1	20100408	WO2009FR51854	20090930
ZA201102305 A	20111228	ZA20110002305	20110329

Priority:

FR20080056575 20080930 WO2009FR51854 20090930

Probable Assignee: SAINT GOBAIN SA

Assignee(s): (std): BLANCHARD ARIANE ; DRESE ROBERT ; FISCHER KLAUS ; JANZYK SEBASTIAN ; SAINT GOBAIN ; SAINT GOBAIN GLASS FRANCE ; SAINT GOBAIN SA

Inventor(s): (std): ARIANE BLANCHARD ; ROBERT DRESE ; SEBASTIAN JANZYK ; KLAUS FISCHER ; ARIANE WEISSLER ; BLANCHARD ARIANE ; JANZYK SEBASTIAN ; FISCHER KLAUS ; DRESE ROBERT

Inventor(s): WEISSLER ARIANE

Agent(s): GOUDREAU GAGE DUBUC; JAMET VINCENT; SAINT GOBAIN RECHERCHE; KAWAGUTI AND PARTNERS

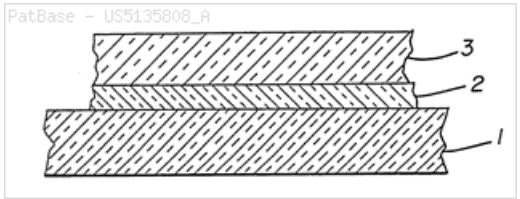
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

8) Family number: 29616360 (US5135808A)

Title: ABRASION WEAR RESISTANT COATED SUBSTRATE PRODUCT

Abstract: The coated substrate product finds particular application in eyeglass and sunglass lenses, architectural glass, analytical instrument windows, automotive windshields and laser bar code scanners for use in retail stores and supermarkets. The product comprises a substantially optically transparent substrate, a chemically vapor deposited first interlayer bonded to the substrate and a chemically vapor deposited outer layer of substantially optically transparent diamond-like carbon bonded to the interlayer and away from the substrate.

Classifications:



International (IPC 8-9): B32B15/04 B32B17/06 B32B18/00 B32B7/02 B32B9/00 C03C17/06 C03C17/22 C03C17/34 C03C17/36 C04B41/87 C23C14/02 C23C14/06 C23C14/08 C23C14/10 C23C14/18 C23C14/30 C23C14/35 C23C16/00 C23C16/02 C23C16/26 C23C16/27 C23C16/30 G02B1/10 G02B1/14 (Advanced/Invention);
B32B17/06 B32B7/02 B32B9/00 C03C17/06 C03C17/22 C03C17/34 C03C17/36 C04B41/87 C23C14/02 C23C14/06 C23C14/08 C23C16/02 C23C16/26 G02B1/10 (Core/Invention)
International (IPC 1-7): B32B15/04 B32B17/06 B32B17/06 B32B18/00 B32B33/00 B32B7/02 B32B7/02 B32B9/00 B32B9/00 C03C17/06 C03C17/22 C03C17/34 C03C17/36 C04B41/87 C23C14/00 C23C14/02 C23C14/06 C23C14/08 C23C14/10 C23C14/18 C23C14/30 C23C14/35 C23C16/00 C23C16/00 C23C16/02 C23C16/02 C23C16/26 G02B1/10 G06K7/10
CPC: Y10S427/103 Y10S428/913 Y10T428/265 Y10T428/30 Y10T428/24975 C23C14/06 B32B17/06 C03C17/06 C03C17/3417 C03C17/3435 C03C17/3441 C03C17/3452 C03C17/347 C03C17/3476 C03C17/36 C03C17/3613 C03C17/3618 C03C17/3621 C03C17/3626 C03C17/3628 C03C17/3634 C03C17/3642 C03C2217/734 C03C2217/78 C23C14/021 C23C14/024 C23C14/025

C23C14/0605 C23C14/0647 C23C14/0676 C23C14/081 C23C14/083 C23C14/086 C23C16/0227 C23C16/0272 C23C16/0281 C23C16/26 G02B1/105 C23C14/02 C23C14/0629 C23C14/0635 C23C14/0641 C23C14/08 C23C14/082 C23C14/10 C23C14/18 Y10T428/31815 G02B1/111 G02B1/14 C03C23/005 C03C2218/31
European: B32B17/06 C03C17/06 C03C17/34D2 C03C17/34D4B C03C17/34D4D C03C17/34D4F2 C03C17/34D4H2 C03C17/34D4H4 C03C17/36 C03C17/36B316 C03C17/36B320 C03C17/36B330 C03C17/36B332 C03C17/36B334 C03C17/36B336 C03C17/36B340 C23C14/02 C23C14/02A C23C14/02B C23C14/02B2 C23C14/06 C23C14/06B C23C14/06D2 C23C14/06E C23C14/06F C23C14/06F2 C23C14/06J C23C14/08 C23C14/08D C23C14/08F C23C14/08H C23C14/08L C23C14/10 C23C14/18 C23C16/02D C23C16/02H C23C16/02H2 C23C16/26 G02B1/10B M03C217/734 M03C217/780
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Family:

Publication number	Publication date	Application number	Application date
AT190005 E	20000315	AT19910917902T	19910920
AT199679 E	20010315	AT19930916422T	19930603
CA2090109 AA	19930222	CA19912090109	19910920
CA2090109 C	20010529	CA19912090109	19910920
CA2141536 AA	19950131	CA19932141536	19930603
CA2141536 C	20040824	CA19932141536	19930603
CA2172829 AA	19960327	CA19942172829	19940824
DE69132010 D1	20000406	DE19916032010	19910920
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DE69330029 D1	20010419	DE19936030029	19930603
DE69330029 T2	20011031	DE19936030029T	19930603
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EP0550630 A4	19950125	EP19910917902	19910920
EP0550630 B1	20000301	EP19910917902	19910920
EP0652828 A1	19950517	EP19930916422	19930603
EP0652828 A4	19950906	EP19930916422	19930603
EP0652828 B1	20010314	EP19930916422	19930603
EP0728069 A1	19960828	EP19940927243	19940824
EP0728069 A4	19961218	EP19940927243	19940824
JP06501745 T2	19940224	JP19910516756T	19910920
JP08500063 T2	19960109	JP19930505274T	19930603
JP3312148 B2	20020805	JP19910516756T	19910920
JP6501745 T2	19940224	JP19910516756T	19910920
JP8500063 T2	19960109	JP19930505274T	19930603
US5135808 A	19920804	US19900589447	19900927
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US5506038 A	19960409	US19940262047	19940616
US5508092 A	19960416	US19940258408	19940613
US5527596 A	19960618	US19930149646	19931108
US5635245 A	19970603	US19960588530	19960118
US5637353 A	19970610	US19960588109	19960118
US5643423 A	19970701	US19930161896	19931203
US5844225 A	19981201	US19970812478	19970306
WO9205951 A1	19920416	WO1991US06866	19910920
WO9403331 A1	19940217	WO1993US05257	19930603
WO9513189 A1	19950518	WO1994US09652	19940824

Priority:

US19900589447 19900927 WO1991US06866 19910920 US19920924297 19920803
WO1993US05257 19930603 US19930149646 19931108 US19930161896 19931203
US19940258408 19940613 US19940262047 19940616 WO1994US09652 19940824
WO1994US09652 19940824 US19960588530 19960118 US19960588109 19960118
US19970812478 19970306

Probable Assignee: MORGAN ADVANCED CERAMICS INC

Assignee(s): (std): DIAMONEX INC ; MONSANTO CO

Assignee(s): MONSANTO CO ST LOUIS ; MORGAN ADVANCED CERAMICS INC ; MORGAN CHEMICAL PRODUCTS INC ; FINKE STEVEN JAMES ; KIMOCK FRED M ; KNAPP BRADLEY J

Inventor(s): (std): GALDIERI JOHN V ; FINKE STEVEN J ; FINKE STEVEN JAMES ; KIMOCK FRED M ; KNAPP BRADLEY J

Inventor(s): KNAPP J ; FINKE JAMES ; KIMOCK M ; DIAMONEX INC

Agent(s): MACRAE AND CO

Designated states: AT BE CA CH DE DK ES FR GB GR IE IT JP LI LU MC NL PT SE

9) Family number: 34026360 (US2006287408A)

Title: PROTECTIVE COATING FOR WINDOW GLASS

Abstract: The invention is a composition comprising: a) one or more film forming resins having at least one functional group capable of polymerization; b) one or more reactive diluents capable of reacting with the film forming resin; c) one or more silicon, titanium, zirconium, aluminum or metal containing compounds capable of promoting adhesion of the composition to glass; d) one or more fillers capable of imparting abrasion resistance to the composition when cured; and e) one or more compounds which is reactive with the film forming resin which also contains at least one acidic moiety. The composition of the invention is useful as a

frit on the window of a vehicle.

Classifications:

International (IPC 8-9): B05D5/06 B29C71/04 B32B17/06 B32B17/10 B32B27/08 B60J1/00 B60J10/00 B60J10/02 B60J10/70 C03C17/00 C03C17/30 C03C17/32 C03C17/38 C08F222/10 C08G18/71 C08J3/28 C08J7/04 C08J7/06 C08K3/08 C08L33/10 C09D151/08 C09D175/04 C09D175/06 C09D175/14 C09D175/16 C09D183/04 C09D201/02 C09D4/00 C09D4/02 C09D4/06 C09D5/33 C09D7/12 C09J143/04 C09J157/12 E04F13/14 E06B3/00 G02F1/361 (Advanced/Invention); C03C17/38 C08F222/10 C09D4/06 E04F13/14 E06B9/24 (Advanced/Non-invention); B29C71/00 B32B17/06 B60J10/00 C03C17/28 C03C17/36 C08F222/00 C08J3/28 C08J7/00 C08L33/00 C09D175/04 C09D175/06 C09D175/14 C09D201/02 C09D4/00 C09D4/02 C09D4/06 C09D5/33 C09D7/12 E04F13/14 E06B3/00 G02F1/35 (Core/Invention); E06B9/24 (Core/Non-invention)

International (IPC 1-7): C03C17/38 C09D4/00

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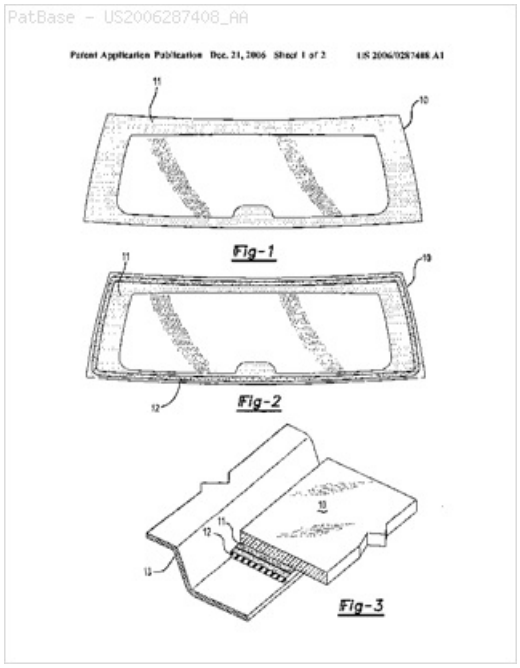
US: 156/329 156/329S 156/331.4 156/331.400S 252/582 252/582S 427/165 427/165S 428/38 428/38P 428/429 428/429S 428/433 428/433S 428/434 428/434S 428/441 428/441S 428/447 428/447S 428/500 428/500S 52/204.5 52/204.500P 522/71 522/71P 522/8 522/8P 522/91 524/430 524/430S 525/29 525/301 525/925



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Publication number	Publication date	Application number	Application date
BRPI0613787 A2	20110208	BR2006PI13787	20060620
BRPI0621688 A2	20111220	BR2006PI21688	20061220
CA2610961 AA	20071205	CA20062610961	20060620
CA2656514 AA	20081219	CA20062656514	20061220
CA2656514 C	20120313	CA20062656514	20061220
CN101218311 A	20080709	CN200680022251	20060620
CN101218311 B	20121121	CN200680022251	20060620
CN101472852 A	20090701	CN200680055032	20061220
CN101472852 B	20120208	CN200680055032	20061220
DE602006048575 D1	20160512	DE200660048575T	20061220
EP1904589 A1	20080402	EP20060773798	20060620
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EP2035341 A1	20090318	EP20060848064	20061220
EP2035341 B1	20160406	EP20060848064	20061220
IN05861CN2007 A	20080627	IN2007CN05861	20071219
IN06972CN2008 A	20090327	IN2008CN06972	20081218
JP2008544070 T2	20081204	JP20080518404T	20060620
JP2009541196 T2	20091126	JP20090516476T	20061220
JP5192373 B2	20130508	JP20080518404T	20060620
JP5264718 B2	20130814	JP20090516476T	20061220
KR101035428 B1	20110518	KR20087030920	20061220
KR101268150 B1	20130531	KR20077029534	20060620
KR20080031866 A	20080411	KR20077029534	20060620
KR20090018145 A	20090219	KR20087030920	20061220
MX2007016092 A1	20080310	MX20070016092	20060620
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RU2008102078 A	20090727	RU20080102078	20060620
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TH95370 A	20090430	TH20071002997	20070618
US2006287408 AA	20061221	US20060472119	20060620
US2007151178 AA	20070705	US20060643455	20061220
US2010316828 AA	20101216	US20100859822	20100820
US2012046375 AA	20120223	US20110287205	20111102
US7781493 BB	20100824	US20060472119	20060620
US7786183 BB	20100831	US20060643455	20061220
US8080299 BB	20111220	US20100859822	20100820
US8273801 BB	20120925	US20110287205	20111102
WO07002328 A1	20070104	WO2006US24369	20060620
WO07149125 A1	20071227	WO2006US49094	20061220

Priority:

US20050692318 20050620
US20050692318P 20050620
US20060472119 20060620
WO2006US24369 20060620
WO2006EP24369 20060620
EP20060848064 20061220
US20060643455 20061220
WO2006US49094 20061220
US20100859822 20100820
US20110287205 20111102

Probable Assignee: DOW GLOBAL TECHNOLOGIES LLC

Assignee(s): (std): ALLAM DOMINIC J ; BAIKERIKAR KIRAN ; BAIKERIKAR KIRAN K ; BURRIS MARCY N ; DAU GLOBAL TEKNOLODZHIZ INK ; MAHDI SYED Z ; DOW GLOBAL TECHNOLOGIES INC ; KNEISEL ANDREW R ; DOW GLOBAL TECHNOLOGIES LLC

Assignee(s): DOW GLOBAL TECHNOLOGIES LLC MIDLAND

Inventor(s): (std): MAHDI SYED Z ; BAIKERIKAR KIRAN ; BAIKERIKAR KIRAN K ; BURRIS MARCY N ; KNEISEL ANDREW R ; ALLAM DOMINIC J ; KIRAN BAIKERIKAR ; BEJKERIKAR KIRAN ; MAKHDI SAID Z ; NEJSEL EHNDRJU R ; BARRIZ MEHRSI N ; ALLAM DOMINIK DZH

Inventor(s): SYED Z MAHDI ; ALLAM DOMINIC J CANTON ; BURRIS MARCY N DAVISBURG ; MAHDI SYED Z ROCHESTER HILLS ; KNEISEL ANDREW R CLARKSTON ; BAIKERIKAR KIRAN MIDLAND ; KNEISEL ANDREW ; ALLAM DOMINIC ; BURRIS MARCY ; DOMINIC J ALLAM ; ANDREW R KNEISEL ; MARCY N BURRIS ; MAHDI SYED

Agent(s): SMART AND BIGGAR; RAYNOR JOHN ET AL; BECK GREENER; AOKI ATSUSHI; ISHIDA TAKASHI; KOGA TETSUJI; THE DOW CHEMICAL COMPANY; DOW CHEMICAL CO; THE DOW CHEMICAL COMPANY / DOBRUSIN AND THENNISCH PC; DOW CHEMICAL CO DOBRUSIN AND THENNISCH PC; DOBRUSIN AND THENNISCH PC

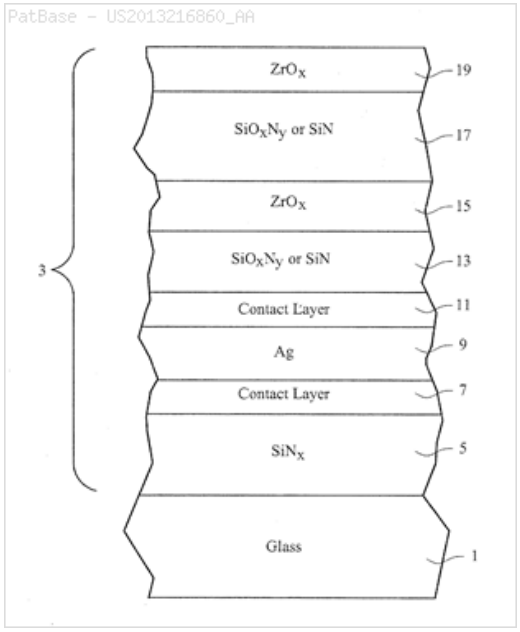
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

10) Family number: 54589400 (US2013216860A)

Title: COATED ARTICLE WITH LOW-E COATING HAVING MULTILAYER OVERCOAT AND METHOD OF MAKING SAME

Abstract: A coated article is provided so as to include a low-E (low emissivity) coating having an infrared (IR) reflecting layer(s) of or including a material such as silver (Ag), which is provided between a pair of contact layers. The low-E coating includes an overcoat having at least one layer of or including zirconium oxide and/or a substantially metallic layer. The overcoat has been found to improve the durability of the coating without significantly sacrificing desired optical characteristics. Such coated articles may be used in the context of windows.

Classifications:
International (IPC 8-9): B32B15/04 B32B17/06 B32B9/04 C03C17/36 (Advanced/Invention)
CPC: C03C17/3618 C03C17/3626 C03C17/3644 C03C17/3652 C03C17/3681 C03C2217/78 C03C2218/322 Y10T428/12549 Y10T428/265 C03C17/3607 C03C17/3639 C03C17/3642 C03C17/366 C03C17/36 Y10T428/31678
US: 428/336 428/426 428/428 428/432 428/433 428/434 428/457 428/623 428/688 428/689 428/699 428/701 428/702



Family:

Publication number	Publication date	Application number	Application date
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US2015225286 AA	20150813	US20150690557	20150420
US9017821 BB	20150428	US20120401948	20120222
US9499437 BB	20161122	US20150690557	20150420
WO13126224 A1	20130829	WO2013US25491	20130211

Priority:
US20120401948 20120222 US20150690557 20150420

Probable Assignee: GUARDIAN GLASS LLC

Assignee(s): (std): BOYCE BRENT ; GUARDIAN IND ; WUILLAUME FRANCIS ; IMRAN MUHAMMAD

Assignee(s): GUARDIAN IND CORP ; GUARDIAN GLASS LLC

Inventor(s): (std): WUILLAUME FRANCIS ; BOYCE BRENT ; IMRAN MUHAMMAD

Agent(s): NIXON AND VANDERHYE PC; RHOA JOSEPH A

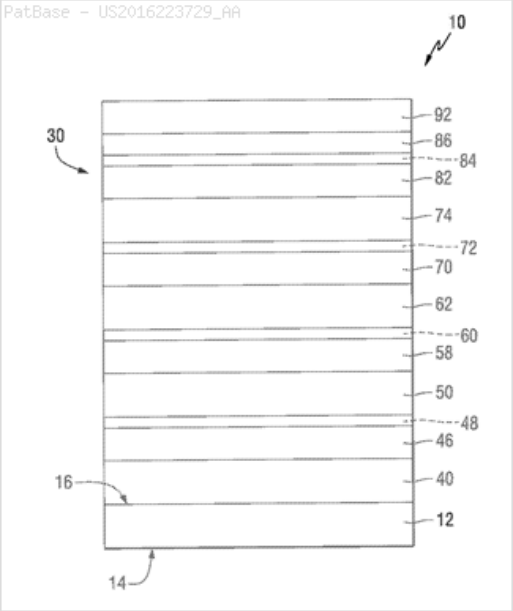
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

11) Family number: 63039401 (US2016223729A)

Title: SOLAR CONTROL COATING WITH ENHANCED SOLAR CONTROL PERFORMANCE

Abstract: A solar control coating includes at least four phase adjustment layers and at least four metal functional layers. At least one of the metal functional layers can be a continuous layer. At least one of the metal functional layers can be a subcritical layer. The solar control coating provides reference IGU values of luminous transmittance no greater than 64 percent, SHGC of no greater than 0.5, and LSG of at least 1.85.

Classifications:
International (IPC 8-9): B32B7/02 B32B9/00 C03C17/36 G02B1/10 G02B1/14 G02B5/20 G02B5/22 G02B5/26 G02B5/28 (Advanced/Invention)
CPC: G02B5/282 G02B5/208 G02B1/14 G02B5/22 C03C17/3642 G02B1/10 G02B5/20 C03C17/3649 C03C17/36 C03C17/3639 C03C17/3644 C03C17/366 C03C17/3681 C03C2217/734 C03C2217/944
US: 359/360



Family:

Publication number	Publication date	Application number	Application date
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CN107406308 A	20171128	CN201680014023	20160203
CN108137394 A	20180608	CN201680056772	20160831
CO20170007805 A2	20171020	CO20170007805	20170731
CO20180002372 A2	20180521	CO20180002372	20180301
EP3344591 A1	20180711	EP20160771027	20160831
IN201717027448 A	20170929	IN201717027448	20170802
IN201817006394 A	20180622	IN201817006394	20180220
JP2018507441 T2	20180315	JP20170540817T	20160203
JP2018528892 T2	20181004	JP20180530658T	20160831
KR20170117447 A	20171023	KR20177024454	20160203
KR20180048917 A	20180510	KR20187009110	20160831
MX2018002369 A1	20180413	MX20180002369	20160831
US2016223729 AA	20160804	US20160013600	20160202
US2017059753 AA	20170302	US20160251025	20160830
US10345499 BB	20190709	US20160013600	20160202
WO16126758 A1	20160811	WO2016US16269	20160203
WO17040563 A1	20170309	WO2016US49554	20160831

Priority:

US20150111235P 20150203 US20150212665P 20150901 US20160013600 20160202
WO2016US16269 20160203 US20160311440P 20160322 US20160251025 20160830
WO2016US49554 20160831

Probable Assignee: VITRO FLAT GLASS LLC

Assignee(s): (std): PPG IND OHIO INC ; VITRO FLAT GLASS LLC ; VITRO S A B DE C V

Assignee(s): WAGNER ANDREW V ; VITRO S AB DE CV ; VITRO SAB DE CV ; FISHER PATRICK ; MEDWICK PAUL A

Inventor(s): (std): FISHER PATRICK ; ANDREW V WAGNER ; JAMES P THIEL ; PAUL A MEDWICK ; PATRICK FISHER ; THIEL JAMES P ; MEDWICK PAUL A ; WAGNER ANDREW V

Inventor(s): PAUL MEDWICK A ; ANDREW WAGNER V

Agent(s): BORDEN LADNER GERVAIS LLP; ALICIA LLOREDA RICAURTE; JUAN PABLO CADENA SARMIENTO; F AND E PATENT; ASAMURA PATENT OFFICE PC; WEBB LAW FIRM; SIMINERIO ANDREW C ET AL

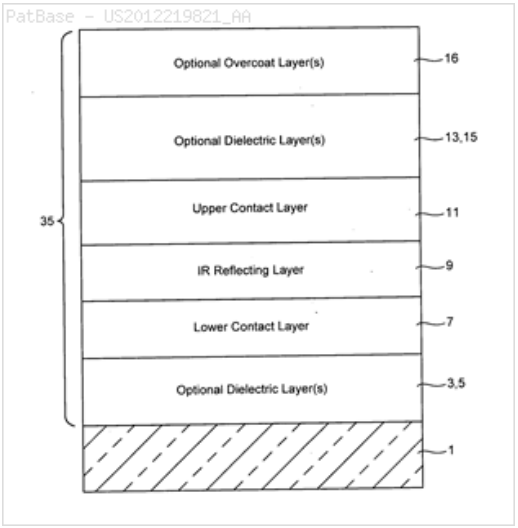
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

12) Family number: 51806770 (US2012219821A)

Title: COATED ARTICLE INCLUDING LOW-EMISSIVITY COATING, INSULATING GLASS UNIT INCLUDING COATED ARTICLE, AND/OR METHODS OF MAKING THE SAME

Abstract: Certain example embodiments relate to a coated article including at least one infrared (IR) reflecting layer of a material such as silver or the like in a low-E coating, and methods of making the same. In certain cases, at least one layer of the coating is of or includes nickel and/or titanium (e.g., NixTiyOz). The provision of a layer including nickel titanium and/or an oxide thereof may permit a layer to be used that has good adhesion to the IR reflecting layer, and reduced absorption of visible light (resulting in a coated article with a higher visible transmission). When a layer including nickel titanium oxide is provided directly over and/or under the IR reflecting layer (e.g., as a barrier layer), this may result in improved chemical and mechanical durability. Thus, visible transmission may be improved if desired, without compromising durability; or, durability may simply be increased.

Classifications:
International (IPC 8-9): B05D1/36 B05D3/02 B05D5/06 B32B15/04 B32B17/06 B32B37/02 B32B37/14 C03C17/06 C03C17/34 C03C17/36 C03C27/06 (Advanced/Invention)
CPC: C03C17/06 C03C17/3639 C03C17/3626 C03C17/366 C03C17/3652 Y10T156/10 Y10T428/12549 Y10T428/12597 C03C17/36
European: C03C17/36 C03C17/36B339 C03C17/36B346 C03C17/36B352L
US: 156/145 156/60 156/60S 427/160 427/162 427/162S 427/383.5 427/383.500S 427/404 427/404S 428/434 428/623 428/630 428/630P 428/699 428/701 428/702



Family:

Publication number	Publication date	Application number	Application date
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CA2826562 AA	20130802	CA20122826562	20120216
CA2826562 C	20151229	CA20122826562	20120216
CN103492337 A	20140101	CN201280019363	20120216
CN108455877 A	20180828	CN201810322241	20120216
EP2678286 A1	20140101	EP20120708196	20120216
EP2678286 B1	20190116	EP20120708196	20120216
IN07153DN2013 A	20150123	IN2013DN07153	20130812
IN310005 B	20190329	IN2013DN07153	20130812
KR101943123 B1	20190128	KR20137023200	20120216
KR20140045329 A	20140416	KR20137023200	20120216
MX2013009704 A1	20131206	MX20130009704	20120216
MX338877 B	20160504	MX20130009704	20120216
RU2013143140 A	20150327	RU20130143140	20120216
RU2581917 C2	20160420	RU20130143140	20120216
SA4029 B1	20150527	SA20120330293	20120221
US2012219821 AA	20120830	US20110064066	20110303
US2013118673 AA	20130516	US20130738163	20130110
US2014017510 AA	20140116	US20130029900	20130918
US2017349482 AA	20171207	US20170680288	20170818
US2018065885 AA	20180308	US20170797286	20171030
US2019092682 AA	20190328	US20180185152	20181109
US8557391 BB	20131015	US20110064066	20110303
US9751801 BB	20170905	US20130738163	20130110
US9802860 BB	20171031	US20130029900	20130918
US10138160 BB	20181127	US20170680288	20170818
US10214447 BB	20190226	US20170797286	20171030
WO12115850 A1	20120830	WO2012US25387	20120216
WO12115850 A8	20131010	WO2012US25387	20120216

Priority:

US20110446411P 20110224 US20110064066 20110303 CN201280019363 20120216
WO2012US25387 20120216 US20130738163 20130110 US20130029900 20130918
US20170680288 20170818 US20170797286 20171030 US20180185152 20181109

Probable Assignee: GUARDIAN EUROPE RL SA

Assignee(s): (std): CRVC ; CT LUXEMBOURGEOIS RECH VERRE ; GUARDIAN INDUSTRIES ; DIETRICH ANTON ; IMRAN MUHAMMAD ; LEMMER JEAN MARC ; FRANK MARCUS ; MILLER GREG ; GUARDIAN IND ; SANTR LJUKSAMBURZHUA DE RESHERSH PUR LE VERR E LJA SERAMIK S A S R V S ; GARDIAN INDASTRIZ KORP ; BLACKER RICHARD ; CENTRE LUXEMBOURGEOIS DE RECH POUR LE VERRE ET LA CERAM S A C R V C ; GUARDIAN GLASS LLC ; GUARDIAN EUROPE S A R L

Assignee(s): GUARDIAN EUROPE RL SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE CRVC SA ; SANTR

LJUKSAMBURZHUA DE RESHERSH PUR LE VERR E LJA SERAMIK SRVS SA ; GUARDIAN EUROPE SARL ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERREET LA CERAMIQUE SA C R V C ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE SA C R V C ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERREET LA CERAMIQUE SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERREET LA CERAMIQUE CRVC SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE SARL ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE RL SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE SARL C R V C ; GUARDIAN IND CORP ; GUARDIAN INDUSTRIES CORP

Inventor(s): (std): MILLER GREG ; DIETRICH ANTON ; FRANK MARCUS ; IMRAN MUHAMMAD ; BLACKER RICHARD ; LEMMER JEAN MARC ; FRANK MARKUS ; EMMER JEAN MARC ; IMRAH MUHAMMAD ; FRENK MARKUS ; DITRIKH ANTON ; LEMMER ZHAN MARK ; IMRAN MUKHAMMAD ; BLEKER RICHARD

Inventor(s): MUHAMMAD IMRAN ; ANTON DIETRICH ; JEAN MARC LEMMER ; GREG MILLER ; RICHARD BLACKER ; MARCUS FRANK

Agent(s): MACPHERSON LESLIE AND TYERMAN LLP; MLT AIKINS LLP; HESS PETER K G; NIXON AND VANDERHYE PC; RHOA JOSEPH A

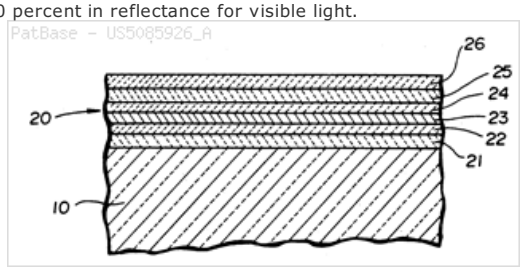
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

13) Family number: 4919893 (US5085926A)

Title: NEAT REFLECTING GLASS WITH MULTILAYER COATING

Abstract: The invention provides a heat reflecting glass plate with a six-layer coating excellent in optical characteristics and also in durability on a transparent glass plate. The coating consists of (1) a metal oxide film deposited on the glass surface, (2) a metal nitride or oxynitride film deposited on the oxide film, (3) a metal film of Ti, Zr, Ta, Cr, Ni-Cr or stainless steel deposited on the nitride or oxynitride film to a thickness of 30-150 ANGSTROM, (4) a metal nitride or oxynitride film overlying the metal film, (5) a metal oxide film overlying the film (4) and (6) a film of an oxide or oxynitride of Si-Al, Si-Ti or a film of aluminum nitride or oxynitride deposited on the film (5) to a thickness greater than 300 ANGSTROM. The metal for the oxide films (1) and (5) is Ti, Zr, Ta, Sn or Cr, and the metal for the nitride or oxynitride films (2) and (4) is Ti, Zr, Ta, Cr, Ni-Cr or stainless steel. Each of the oxide films (1) and (5) is 200-1000 ANGSTROM in thickness, and each of the nitride or oxynitride films (2) and (4) is 300-200 ANGSTROM in thickness. The heat reflecting glass plate is not lower than 30 percent in transmittance for visible light, not higher than 60 percent in transmittance for solar radiation and not higher than 20 percent in reflectance for visible light.

Classifications:
International (IPC 8-9): C03C17/36 (Advanced/Invention); C03C17/36 (Core/Invention)
International (IPC 1-7): B32B17/06 B60J1/00 C03C17/36 C23C14/06
CPC: Y10T428/24967 Y10T428/24975 Y10T428/265 C03C17/3618 C03C17/36 C03C17/3626 C03C17/3649 C03C17/366 C03C17/3681 C03C2217/78 Y10T428/31678
European: C03C17/36 C03C17/36B320 C03C17/36B332 C03C17/36B344 C03C17/36B352L C03C17/36B356 M03C217/780
US: 359/359 359/360 359/580 359/589 428/215 428/216 428/336 428/34 428/426 428/432 428/433 428/457 428/469 428/472 428/698 428/699 428/701 428/702 428/704



Family:

Publication number	Publication date	Application number	Application date
DE4006029 A1	19900830	DE19904006029	19900226
DE4006029 C2	19910613	DE19904006029	19900226
JP2225346 A2	19900907	JP19890045644	19890227
US5085926 A	19920204	US19900484810	19900226

Priority:
JP19890045644 19890227

Probable Assignee: CENTRAL GLASS CO LTD

Assignee(s): (std): CENTRAL GLASS CO LTD

Assignee(s): CENTRAL GLASS CO LTD UBE YAMAGUCHI JP ; CENTRAL GLASS COMPANY LIMITED ; CENTRAL GLASS CO

Inventor(s): (std): IIDA HIRONOBU ; IIDA YASUNOBU ; NAKAMURA MASATO ; ONISHI KEIJI ; TAKEUCHI NOBUYUKI

Inventor(s): TAKEUCHI NOBUYUKI ISE JP ; ONISHI KEIJI MATSUSAKA JP ; NAKAMURA MASATO MIE JP ; IIDA YASUNOBU MATSUSAKA JP

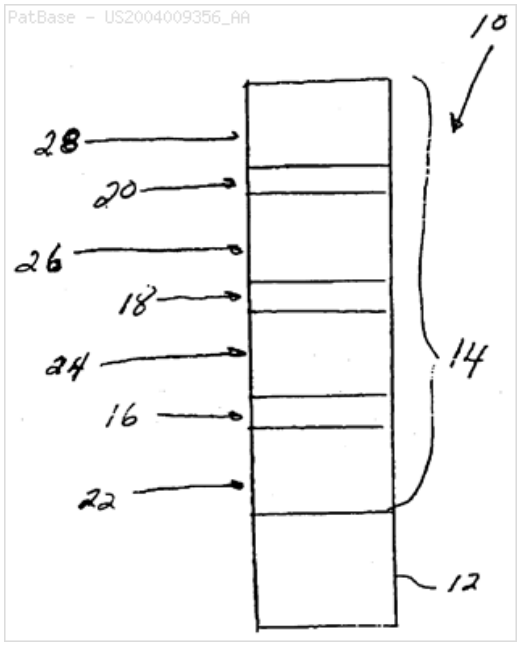
14) Family number: 29580978 (US2004009356A)

Title: SUBSTRATE HAVING THERMAL MANAGEMENT COATING FOR AN INSULATING GLASS UNIT

Abstract: A coated article is provided for use in an IG unit. The article includes a substrate and a coating formed over at least a portion of the substrate. The coating includes a plurality of separation layers having one or more dielectric layers and a plurality of infrared reflective layers. The coating can be positioned on the #2 or #3 surface of the IG unit and can provide a reference solar heat gain coefficient of less than or equal to 0.35.

Classifications:
International (IPC 8-9): B32B15/04 B32B17/06 C03C C03C17/36 C03C27/06 E06B E06B3/66 E06B9/24 (Advanced/Invention); B32B17/06 C03C17/36 C03C27/06 E06B3/66 E06B9/24 (Core/Invention); C03C E06B (Subclass/Invention)
International (IPC 1-7): B32B17/06 C03C17/36 C03C27/06 E06B3/66

E06B9/24
CPC: C03C17/3613 C03C17/36 C03C17/3618 C03C17/3639 C03C17/366 C03C17/3681
European: C03C17/36 C03C17/36B316 C03C17/36B320 C03C17/36B339 C03C17/36B352L C03C17/36B356
US: 428/432 428/432P 428/434 428/469 428/469S 428/689 428/698 428/698S 428/699 428/701 428/702 428/702S



Family:

Publication number	Publication date	Application number	Application date
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CN100379699 C	20080409	CN20038012710	20030502
CN1659110 A	20050824	CN20038012710	20030502
CZ20041076 A3	20050316	CZ20040001076	20030502
CZ307556 B6	20181205	CZ20040001076	20030502
EP1501768 A1	20050202	EP20030724450	20030502
EP1501768 B1	20170419	EP20030724450	20030502
ES2627198 T3	20170727	ES20030724450T	20030502
HK1081940 A1	20090213	HK20060102493	20060224
HK1081940 A1	20060526	HK20060102493	20060224
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HK1081940 B	20090213	HK20060102493	20060224
JP2005524598 T2	20050818	JP20040501331T	20030502
JP2009215168 A2	20090924	JP20090157128	20090701
JP5066323 B2	20121107	JP20040501331T	20030502
JP5448610 B2	20140319	JP20090157128	20090701
MXPA04010882 A1	20050125	MX2004PA10882	20030502
RU2004135318 A	20050627	RU20040135318	20030502
RU2342335 C2	20081227	RU20040135318	20030502
TR201706660 T4	20170522	TR20170006660T	20030502
US2004009356 AA	20040115	US20030428481	20030502
US2007116967 AA	20070524	US20060519188	20060911
US7910229 BB	20110322	US20060519188	20060911
WO03093188 A1	20031113	WO2003US14027	20030502

Priority:

US20020377783P 20020503 EP20030724450 20030502 JP20040501331 20030502
US20030428481 20030502 WO2003US14027 20030502 US20060519188 20060911

Probable Assignee: VITRO FLAT GLASS LLC

Assignee(s): (std): PPG IND OHIO ; PPG IND OHIO INC ; PPG INDASTRIZ OGAJO INK ; VITRO S A B DE C V

Assignee(s): WAGNER ANDREW V ; VITRO SAB DE CV ; MEDWICK PAUL A ; O SHAUGHNESSY DENNIS J ; PPG IND ; PPG INDUSTRIES OHIO INC ; VITRO FLAT GLASS LLC

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Title: METHOD OF BONDING SILVER TO GLASS AND MIRRORS PRODUCED ACCORDING TO THIS METHOD

Abstract: A method for adhering silver to a glass substrate for producing mirrors includes attaining a silicon enriched substrate surface by reducing the oxygen therein in a vacuum and then vacuum depositing a silver layer onto the silicon enriched surface. The silicon enrichment can be attained by electron beam bombardment, ion beam bombardment, or neutral beam bombardment. It can also be attained by depositing a metal, such as aluminum, on the substrate surface, allowing the metal to oxidize by pulling oxygen from the substrate surface, thereby leaving a silicon enriched surface, and then etching or eroding the metal oxide layer away to expose the silicon enriched surface. Ultraviolet rays can be used to maintain dangling silicon bonds on the enriched surface until covalent bonding with the silver can occur. This disclosure also includes encapsulated mirrors with diffusion layers built therein. One of these mirrors is assembled on a polymer substrate.

Classifications:
International (IPC 8-9): C03C17/06 C03C17/09 C03C17/245 C03C17/34 C03C17/36 C03C23/00 C23C14/02 C23C14/18 C23C8/02 C23C8/06 G02B1/10 G02B5/08 (Advanced/Invention);
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