

Internal distribution code:

- (A) Publication in OJ
(B) To Chairmen and Members
(C) To Chairmen
(D) No distribution

**Datasheet for the decision
of 11 May 2011**

Case Number: T 0193/07 - 3.3.05

Application Number: 97932585.9

Publication Number: 0912452

IPC: C03C 1/00

Language of the proceedings: EN

Title of invention:
Arsenic-free glasses

Patentee:
Corning Incorporated

Opponents:
Nippon Electric Glass Co., Ltd.
Schott AG

Headword:
Arsenic-free glasses/CORNING

Relevant legal provisions:
EPC Art. 54, 56, 100(a)(b)(c), 107, 111(1), 112(1)(a)

Keyword:
"Admissibility of the appeal of opponent 2 (no) - not adversely affected"
"Subject-matter extending beyond the content of the application as filed - main request (yes) - auxiliary request 1 (no)"
"Sufficiency of disclosure (auxiliary request 1): yes"
"Novelty (auxiliary request 1): yes"
"Inventive step (auxiliary request): yes - non obvious alternative"
"Referral of a question to the EBA (no)"

Decisions cited:
T 0301/87, T 0473/98, T 0981/01, T 1147/01, T 1341/04,
T 0854/02, T 0908/07

Catchword:
-



Case Number: T 0193/07 - 3.3.05

D E C I S I O N
of the Technical Board of Appeal 3.3.05
of 11 May 2011

Appellant I: Corning Incorporated
(Patent Proprietor) 1 Riverfront Plaza
Corning NY 14831 (US)

Representative: Oldroyd, Richard Duncan
Elkington and Fife LLP
Prospect House
8 Pembroke Road
Sevenoaks
Kent TN13 1XR (GB)

Respondent: Nippon Electric Glass Co., Ltd.
(Opponent 01) 7-1, Seiran 2-Chome
Otsu Shiga 520-8639 (JP)

Representative: Tetzner, Michael
Anwaltskanzlei Dr. Tetzner
Van-Gogh-Strasse 3
D-81479 München (DE)

Appellant II: Schott AG
(Opponent 02) Hattenbergstrasse 10
D-55122 Mainz (DE)

Representative: Herden, Andreas F.
Blumbach - Zinngrebe
PatentConsult
Patentanwälte
Alexandrastrasse 5
D-65187 Wiesbaden (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 5 December 2006
revoking European patent No. 0912452 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: G. Raths
Members: B. Czech
S. Hoffmann

Summary of Facts and Submissions

I. The appeals of the patent proprietor (appellant I) and of opponent 2 (appellant II) are from the decision of the opposition division revoking European Patent No. 0 912 452.

II. In the opposition procedure, the parties relied inter alia on the following documents:

D1: EP 0 607 865 A

D1a: US 5 374 595 A

D3: Material Information, Brochure "Code: 1737F" issued by Corning Inc. Advanced Display Products in January 1996

D3/1: Graph extracted from D3, with comments

D3/2: Graph extracted from D3, with comments

D4: JP 5-306140 A

D4/1: Translation of D4 into English

D9: Diether Böttger, "The use of platinum in the glass industry"; Glass, May 1985, pages 177 and 178

D11: DE 43 21 373 C2

D12: Enlarged Figure 1 of D11, with comments

D13: Enlarged Figure 3 of D11, with comments

D14: Laboratory examination report Nr. 1-2004 00363
concerning a Hitachi "Flora" laptop computer

D16: Internet page http://www.hitachi.co.jp/Prod/comp/OSD/pc/flora/download/type/floral010n_02.htm
Printout of 15.07.2004

D17: EP 0 714 862 A1

D20: Declaration of Mr J C Lapp (co-inventor) dated
15 September 2006.

- III. In the decision under appeal, the opposition division found inter alia
- i) that the pre-grant incorporation of the feature "*essentially free of gaseous inclusions*" into the independent product claim 17 (according to the main request then on file) amounted to a violation of Article 123(2) EPC,
 - ii) that the added feature "*essentially free of alkali metal oxides*" was clear in the light of the description and related to impurities,
 - iii) that auxiliary request I then on file met the novelty requirement, more particularly because it had not been proven that the glasses according to examples 1 to 7 of document D1, or some other prior art low arsenic glasses had a β -OH value of less than 0.5,
 - iv) but that the subject-matter of the independent method claim 1 according to auxiliary request I then on file was not inventive over document D1 taken as the closest prior art.
- IV. Under cover of its statement of grounds of appeal, appellant I (patent proprietor) filed three sets of

claims as new main and auxiliary requests. Referring to the application as filed and to document D20, it submitted that the pending amended claims were not objectionable under Article 123(2) and (3) EPC. Moreover, the subject-matter of the pending claims was not obvious in view of document D1, in particular considering the further limitations implied by the additional amendments made.

Claim 1 according to the main request submitted under cover of the statement of grounds of appeal dated 13 April 2007 reads as follows (amendments to the granted claim 1 made apparent by the board):

"1. A method of making a silicate **sheet** glass ~~comprising~~ **by** melting and forming a silicate ~~sheet~~ glass **which is essentially free of alkali metal oxides** using a downdraw glass manufacturing process **in which the glass is contacted with platinum or a platinum alloy during the melting or forming process,** characterised in that the batch constituents are selected so that the resultant glass contains less than ~~0.2~~ **0.02** mole percent arsenic expressed as As_2O_3 , and the β -OH of said glass is below ~~0.5~~ **0.4** mm^{-1} , where β -OH = $(1/X)\log_{10}(T_1/T_2)$ where X is the thickness in millimetres of a sample of the glass, T_1 is the sample transmittance at **a the** reference wavelength ~~from a region of no hydroxyl absorption~~ (2600 nm) and T_2 is the minimum sample transmittance of the hydroxyl absorption wavelength (2809 nm). "

V. Appellant II (opponent 2) filed its appeal requesting "the revocation of the decision". In its subsequent statement of grounds of appeal, appellant II then

declared its appeal "to be an auxiliary appeal",
"deemed not to be filed if the patentee himself has not
filed an appeal or withdraws his appeal before filing
any legal arguments, facts and/or submissions".
Concerning "material reasons to maintain the appealed
decision" it merely generally referred to its
submissions made before the first instance.

- VI. The respondent (opponent 1), in its reply to the
statement of grounds of appellant I, held that the
independent product claim 13 according to the main
request of appellant I was objectionable under
Article 100(c)/123(2) EPC in view of the feature
"essentially free of gaseous inclusions" comprised
therein. It also raised objections under Articles 123(2)
and (3) and/or 84 EPC against the amended claims
according to the two auxiliary requests of appellant I.
- VII. In a further letter, appellant I set out why it
considered the appeal of appellant II to be
inadmissible.
- VIII. In its reply thereto, appellant II set out why it
considered its own appeal to be admissible. Moreover,
it raised objections under Articles 123(2) and (3) EPC
against the amended method and product claims 1 and 13
according to all three requests of appellant I, and an
objection under Article 100(b) EPC against the
independent product claims 13 according to all said
requests (in view of the feature *"essentially free of
gaseous inclusions"*).
- IX. In response to the summons to oral proceedings,
appellant I filed three further amended sets of claims

as additional auxiliary requests 3 to 5.

- X. In a communication issued in preparation of the oral proceedings, the board indicated that in its provisional opinion the appeal of appellant II was likely to be rejected as inadmissible since the latter did not appear to be adversely affected by the order of the contested decision.

The board took note of the objections raised and pointed out inter alia that appellant I would have to be prepared to indicate the basis in the application as filed for each of the pre-grant and post-grant amendments to the claims. The board acknowledged the objections under Articles 123(2) and (3) and 84 EPC raised in the appeal proceedings. The board also questioned the meaning of the brackets around the wavelength values in the claims and, under Rule 80 EPC, the purpose of the amendment to the preamble of claim 1 (main request, relocation of the term "*sheet*"). The respondent and appellant II were invited to indicate which of their earlier objections were actually upheld in the appeal procedure in view of the pending amended claims.

- XI. In response to the board's communication, appellant II additionally submitted that the claims according to auxiliary requests 3 to 5 of appellant I were also objectionable on the grounds of Articles 123 (2) and (3) EPC. It also held that the newly added feature "*essentially free of alkali metal oxides*" lacked clarity. The product claims were objectionable under Article 100(b) EPC. Moreover, the claimed subject-matter lacked novelty and did not involve an inventive

step. More particularly, lack of novelty was alleged in view of documents D11/D12/D13 (regarding method claims), D17 (regarding product claims), D1a (regarding product and use claims), and the alleged public prior use of FLORA Laptop computers (product and use claims). Lack of inventive step was alleged in view of document D1a (product claims), of the prior use "FLORA" in combination with the teaching of document D1a (products and use claims) or of document D11 (use claims). In said letter, appellant II requested "to maintain the decision of the first instance and to revoke the patent based on Article 56 EPC". Otherwise, the case should be remitted to the opposition division for a "decision on newly filed matter and further grounds for opposition".

XII. In its response to the board's communication, the respondent summarised its objections under Articles 123(2) and (3) EPC, Article 84 EPC and Rule 80 EPC against all the pending requests of appellant I. It also submitted that the subject-matter of the independent process and product claims 1 and 13 was obvious in view of the glass referred to in document D3 (closest prior art) in combination with the teaching of either document D4 or document D1. In this connection, it also referred to document D9.

XIII. Oral proceedings were held on 11 May 2011.

The debate was first focused on the pending objections under Article 123 (2) and (3) and Rule 80 EPC against the main request, concerning in particular the amended preamble of claim 1, the features relating to the measuring of the β -OH value in claims 1 and 13, and the feature "*essentially free of gaseous inclusions*" in

claim 13. Concerning allowability of the amendments under Article 123(2) EPC, the board additionally questioned whether the amendment consisting in the incorporation of the feature "essentially free of alkali oxides" into claim 1 was allowable under Article 123(2) EPC, considering that it appeared to be disclosed only in combination with other features in dependent method claim 14 of the application as filed.

In reaction to this debate, appellant I filed two sets of amended claims and description pages as new auxiliary requests 1 and 2, in replacement of the five auxiliary requests previously on file which were withdrawn. Only the new auxiliary request 2 was objected to by appellant II in view of its late filing.

The sole independent claims 1 and 10 according to the first auxiliary request read as follows (amendments to the granted claim made apparent by the board):

"1. A method of making a silicate glass comprising melting and forming a silicate sheet glass using a **sheet forming** downdraw glass manufacturing process **in which the glass is contacted with platinum or a platinum alloy during the melting or forming process**, characterised in that the batch constituents are selected so that the resultant glass contains less than ~~0.2~~ **0.02** mole percent arsenic expressed as As_2O_3 , and the β -OH of said glass is below ~~0.5~~ **0.4** mm^{-1} , where β -OH = $(1/X)\log_{10}(T_1/T_2)$ where X is the thickness in millimetres of a sample of the glass, T_1 is the sample transmittance at **the** reference wavelength ~~from a region of no hydroxyl absorption~~ **of** $(\pm 2600\text{ nm})$ and T_2 is the minimum sample transmittance of the hydroxyl

absorption wavelength of $\pm 2809 \text{ nm}$ \pm ,
 and wherein the resultant glass comprises an
 aluminoborosilicate glass, expressed in terms of mole
 percent on the oxide basis, having:

SiO_2	60-73	MgO	0-5
Al_2O_3	8-14	CaO	1-13
B_2O_3	5-17	SrO	0-8
TiO_2	0-5	BaO	0-14
Ta_2O_5	0-5		

wherein the resultant glass is essentially free of
 alkali metal oxides and exhibits a strain point higher
 than 630°C ., and a linear coefficient of thermal
 expansion over the temperature range $0^\circ - 300^\circ\text{C}$ between
 $32 - 46 \times 10^{-7} / ^\circ\text{C}$."

~~"10. Use of a flat panel display comprising a flat
 sheet glass substrate wherein said glass is made by a
 method according to any of claims 1 to 9 22 or said
 glass sheet is a sheet is a sheet as claimed in any of
 claims 23 to 29 as substrate in a flat panel display
 device."~~

At the oral proceedings, appellant II maintained that
 its appeal was admissible and formulated and submitted
 in writing the following question to be referred to the
 Enlarged Board of Appeal:

"Hat die Einsprechende ein eigenes Beschwerderecht,
 selbst wenn das mit dem Einspruch angegriffene Patent
 vollständig widerrufen wurde, falls die Patentinhaberin
 in diesem Verfahren Beschwerde eingelegt hat,
 insbesondere um zu verhindern, dass das
 Beschwerdeverfahren zu einem für sie nachteiligen
 Zeitpunkt beendet wird."

XIV. The arguments submitted by the parties, insofar as they concern the requests and issues addressed in this decision, can be summarised as follows:

Appeal of appellant II

Appellant II criticised that, allegedly, no reasoning had been given in the contested decision regarding novelty, e.g. over document D1. It submitted that "without the right to continue appeal proceedings severe disadvantages could be encountered", e.g. in parallel national procedures in Germany or the United States, in case the appealing patent proprietor withdrew its appeal prior to a decision by the board "correcting for instance any undue statements or false arguments". It submitted that its own appeal was admissible considering that the requirements of Article 108 EPC were met. Moreover, the adverse effect mentioned in Article 107 EPC was "not defined or limited to a meaning like "loss of rights" but was "open for case law to take care of the specific circumstances of each case".

Appellant 1 held that the opponent 2 was not "a party to proceedings adversely affected by a decision" within the meaning of Article 107 EPC and thus had no right to appeal.

Main request of appellant I

Concerning the amendments in the claims according to its main request, **appellant I** inter alia considered that the incorporation of the feature "essentially free of alkali metal oxides" into claims 1 and 13 met the

requirements of Article 123(2) EPC, since the skilled person would understand from the whole content of the application as filed that this feature represented a free standing requirement for glasses according to the invention which was not inextricably linked to the other features mentioned in connection therewith in the claims of the application as filed (chemical composition, strain point and thermal expansion).

Appellant II and the **respondent** argued inter alia that the feature "*essentially free alkali metal oxides*" had been singled out with the effect that the subject-matter of amended claim 1 amounted to an intermediate generalisation not disclosed in the application as filed. Appellant II also objected to the formulation of the features defining the method for determining β -OH value under Articles 123(2) and (3) EPC.

Auxiliary request 1 of appellant I

Appellant I held that the amended claims according to auxiliary request 1 filed at the oral proceedings met the requirements of Article 123(2) and (3) EPC.

Only **appellant II** raised objections under Article 123(2) and (3) EPC. In particular, it maintained objections regarding the features concerning the β -OH measuring method and the omission, in claim 1, of a reference to the adjustment of process control variables to obtain a β -OH value of less than 0.4, which reference was present in claim 9 as granted.

At the oral proceedings, the **respondent** and **appellant II** expressly confirmed that they had no

objections under Article 100(b) EPC.

According to **appellant I**, none of the printed prior art documents or alleged prior uses relied upon by the opposing parties disclosed a downdraw method for preparing sheet glass with all the properties recited in claim 1 according to the pending auxiliary request 1. The claimed subject-matter was thus novel. D1, D11, D17 and the "FLORA" prior use related to glasses having different properties and/or being obtained by different preparation methods.

Only **appellant II** raised novelty objections based on the disclosures of documents D1/D1a, D11, D17 and in view of the alleged prior use of "FLORA" laptop computers (D14/D16). Appellant II however conceded that that D17 and the "FLORA" prior use referred to floated and not to downdrawn glass. Concerning D1a/D1, appellant II argued that all the features of the claimed subject-matter were at least implicitly disclosed. The glasses obtained were the same, as acknowledged in paragraph [0021] of the patent in suit. The β -OH value in claim 1 referred to a result, not to a method step, and was implicitly obtained, since a "drying" of the glass composition would inevitably occur when proceeding as disclosed in D1a, column 5, starting at line 40, considering that dry ingredients were used. As acknowledged in the patent in suit, a low water content or β -OH value was mandatory for display sheet glass.

The glasses obtained according to D11 had very low β -OH values as shown in documents D12 and D13. D11 also disclosed their use for display purposes.

Appellant I considered that document D1a/D1 represented the closest prior art. In terms of specific examples, D1a/D1 only disclosed the simultaneous use of substantial amounts of arsenic and antimony as fining agents. D1a/D1 did not disclose a glass comprising essentially no arsenic and having been prepared by a downdraw process wherein the melt was in contact with platinum or a platinum alloy. No attention at all was paid to the water content or β -OH value of the glass. Moreover, D1a/D1 contained no comparative or quantitative information concerning the (low) amount of gas bubbles actually contained in the formed glasses. The two documents did not address the problem underlying the invention according to the patent in suit. Neither did they contradict the statements in the application as filed (page 5, lines 8 to 16) referring to the difficulties encountered in previous attempts to make high strain point glasses by a downdraw method without using arsenic as a fining agent. In this connection, appellant I also referred to D20. Also when starting from a sheet forming method as referred to in D3, D1a did not suggest that the mere replacement of arsenic by antimony, without paying attention to the β -OH value, in the process used to make "1737F" glass would inevitably lead to products of similar quality in terms of β -OH and gaseous inclusions. A comparison of examples 1 and 4 of the patent in suit did not permit such a conclusion either.

D4 was concerned with different, high alkaline glasses with lower strain points for which other fining agents may be used. Hence D4 did not suggest the claimed method either.

The glass according to D11 was so different that the skilled person would not even consider this document in

its quest for a solution to the posed technical problem.

With regard to inventive step, **the respondent** held that the fusion drawn sheet glass "1737F" referred to in D3 had all the features of a glass made according to claim 1 of the auxiliary request, including a β -OH value of less than 0.4 (as apparent from documents D3/1 and D3/2). The indication "fusion drawn" was a disclosure of a downdraw process. It acknowledged that D3 neither disclosed that the glass was contacted with platinum or an alloy thereof during the melting or forming process nor an arsenic content of less than 0.02 mole % expressed as As_2O_3 . However, the first feature was well known and usual in the art of high quality glass production, as illustrated e.g. by document D9. The replacement, for environmental reasons, of arsenic by other fining agents such as antimony or metal halides and/or tin compounds was suggested by D1a/D1 and D4, respectively, and thus obvious. Based on a comparison of the results reported for examples 1 and 4 in the patent in suit, the respondent argued that when replacing arsenic by antimony in the glass according to D3, the β -OH value would inevitably be below the maximum of 0.4 required by claim 1.

Appellant II concurred with the respondent and additionally argued that the claimed subject-matter was also obvious in view of the combined teachings of documents D1a (as closest prior art) and D11. D1a already suggested the use of dry starting materials in the production of a glass for display purposes. Document D11 disclosed in detail the chemical and

physical methods for dewatering a glass melt to be used in the production of glass displays, e.g. by adding halogen compounds or by applying vacuum to the melt. In view of these measures, the addition of known fining agents such as arsenic, antimony or NaCl was merely optional. In the examples according to D11, antimony was used but no arsenic.

XV. The final requests of the parties as confirmed at the oral proceedings are as follows:

Appellant I requested that the decision under appeal be set aside and that the patent be maintained in amended form according to the main request filed under cover of its statement of grounds of appeal dated 13 April 2007 or, in the alternative, according to one of the auxiliary requests 1 or 2 filed during the oral proceedings.

Appellant II (opponent 2) and the respondent (opponent 1) requested that the appeal of appellant I be dismissed.

Appellant II (opponent 2) requested that its question, filed at the oral proceedings, be referred to the Enlarged Board of Appeal.

Reasons for the Decision

Admissibility of the appeals

1. The appeal of appellant I is admissible. This was not in dispute.

2. Admissibility of the appeal of appellant II
 - 2.1 According to Article 107 EPC "any party to the proceedings adversely affected by a decision may appeal".
 - 2.1.1 The first instance opposition proceedings led to the revocation of the patent in its entirety as requested by opponent 2 (see point 2 of the minutes of the oral proceedings on 14 November 2006 and point 9 of the reasons of the contested decision). The order of the decision of the opposition division thus fully complies with the request of opponent 2.
 - 2.1.2 A party is only adversely affected if the order of the appealed decision does not comply with its request. Hence, in the present case, appellant II is not adversely affected by the decision of the opposition division.
 - 2.2 Appellant II argued that Article 107 EPC did not expressly further specify the meaning of "adversely affected". In a case like the present one, with no possibility of continuing appeal proceedings initiated by an appeal of the patent proprietor if the latter withdraws its appeal, procedural situations could occur which could adversely affect the respondent-opponent in

parallel or related national infringement or nullity proceedings.

2.2.1 However, the board observes that appellant II has not identified any specific reasons for which it considered itself to be adversely affected on the day it filed its notice of appeal. Appellant II merely presented purely hypothetical considerations concerning potentially disadvantageous situations that may occur (in the future) in related national litigation proceedings. These considerations have no legal relevance under Article 107 EPC, first sentence.

2.2.2 In this connection, the board also observes that the possibility of an anticipatory cross-appeal is not foreseen by the EPC (see e.g. decision T 0854/02, point 2.2 of the reasons). A respondent-opponent which is not adversely affected by a decision revoking the patent is thus not entitled to file an appeal for the sake of acquiring an independent appellant status instead of the status of a respondent (party as of right).

2.3 Moreover, the board's conclusion in the present case is in accordance with the established jurisprudence of the boards of appeal, according to which in cases where the order of the decision of the opposition division is the revocation of the patent, an opponent who requested revocation of the patent in its entirety is not "adversely affected by" said decision within the meaning of Article 107 EPC, first sentence, irrespective of the reasons given in the decision. Reference can e.g. be made to decisions T 0854/02 of 14 October 2002 (points 3.1 and 3.2 of the reasons),

decisions T 0981/01 of 24 November 2004 (points 5 and 6 of the reasons), T 1147/01 of 16 June 2004 (point 2 of the reasons), T 1341/04 of 10 May 2007 (points 1.2(i) and 1.3 of the reasons) and T 0473/98 (points 2.2 to 2.8 of the reasons). Whether or not the opposition division, in its decision to revoke the patent on the ground of lack of inventive step, dealt with all the novelty objections raised by opponent 2 is thus not relevant in the assessment of the admissibility of the appeal of appellant II. The board sees no reason for deviating from the established case law in the present case.

2.4 Summarising, in the board's judgement, appellant II was not entitled to appeal against the decision of the opposition division, since it was not "*adversely affected by*" said decision within the meaning of Article 107 EPC.

2.5 Therefore, the appeal of appellant II is not admissible.

2.6 Consequently, the board considered the submissions of appellant II from the point of view of its status as a respondent to the appeal of the patent proprietor (appellant I).

Main request of appellant I (patent proprietor)

3. Amendments

3.1 Compared to claim 1 as granted, independent method claim 1 according to the main request was amended *inter alia* by the incorporation of a feature relating to the composition of the glass and reading "*which is essentially free of alkali metal oxides*".

- 3.2 This feature is disclosed in dependent method claim 14 of the application as filed, as well as in claims 22, 25, 42 and 50, but each time strictly in combination i) with the specific glass composition as defined in claim 13, on which claim 14 depends, or with an even narrower composition (claim 25 of the application as filed), and ii) with the two further features expressing mandatory properties of the glass, namely a "*strain point higher than 630°C*" and a "*linear coefficient of thermal expansion over the temperature range of 0°-300°C between 32-46 X 10⁻⁷/°C*".
- 3.3 As pointed out by appellant I, the feature is also mentioned once in the description as filed (page 2, lines 22 to 23). However, this particular passage is part of the acknowledgement of a prior art document and recites criteria to be met, according to said prior art document, specifically by substrates for extrinsically addressed LCDs. Therefore, said passage, taken alone, does not form a sufficient basis for the amendment.
- 3.4 In the remainder of the description of the invention, the issue of the presence or absence of alkali metal oxides is not expressly addressed. Appellant I correctly pointed out that no mention is made on page 8 of the application as filed of the requirement in question, and the purpose of said requirement (avoidance of contamination of the TFT) was clear from the prior art acknowledgement in the contested patent (page 2, line 31 to 35). However, the description of the application as filed does not contain any express or implicit indication of a general desirability or necessity to provide, irrespective of any particular

end use of the glass sheets, low arsenic downdrawn glass sheets with a β -OH value of less than 0.4, which are essentially alkali free but do not have the composition and properties defined in claims 13 and 14 as filed.

- 3.5 On the contrary, from the description of the application as filed (page 2, lines 19 to 28; page 3, lines 13 to 15; page 5, lines 8 to 11) the skilled person will merely gather that the absence of alkali metal oxides, together with chemical durability (depending inter alia on the composition of the glass), a proper thermal expansion coefficient and a high strain point is desirable in the case of glass substrates for certain specific applications in flat panels, more particularly in extrinsically addressed LCDs.
- 3.6 In the board's judgement, there are no passages in the entire application as filed constituting an implicit or express, direct and unambiguous disclosure of the subset of those methods (intermediate generalisation) which show all the features recited in claim 1. The feature "*essentially free of alkaline*" oxides is only disclosed in conjunction with other properties of the glass, the sum of these properties defining a subgroup of glasses intended for very specific applications. The isolation of said feature from its context and its incorporation into claim 1 leads to the definition of a subset of methods which is not limited to the making of sheet glass for specific applications, requiring specific properties (composition, strain point and thermal expansion coefficient).

3.7 Since the subset of methods which is the subject-matter of instant claim 1 constitutes subject-matter extending beyond the content of the application as filed, the amendment in question does not meet the requirements of Article 123(2) EPC.

4. The main request of appellant I is thus not allowable.

Auxiliary request 1 of appellant I (patent proprietor)

5. Admissibility of the request

5.1 The auxiliary request 1 filed at the oral proceedings can be considered as an attempt to address, by way of amendments, objections raised in the board's communication against the claims according to the main request as well as the further objection under Article 123(2) EPC that arose during the oral proceedings.

5.2 Claim 1 according to auxiliary request 1 no longer comprises some of the amendments and features which were previously objected to. Moreover, all the features of dependent claims 20 and 21 as granted (corresponding to claims 13 and 14 of the application as filed) were incorporated into method claim 1. The product claims, and the reference thereto in the independent use claim, were deleted altogether.

5.3 The adverse parties did not object to the filing of this auxiliary request and the board also considers that the particular amendments are not of a particular complexity or could not be dealt with at the oral proceedings.

5.4 In view of these particular circumstances the board decided to admit this new auxiliary request 1 according to Rule 13(1)(3) RPBA despite its late filing.

6. Amendments

6.1 Allowability under Article 123(2)(3) EPC

6.1.1 Independent method claim 1 is based on a combination of the following parts of the application as filed (see WO 98/03442 A1):

- claim 1 (most of the present preamble),
- claim 2 ("*sheet forming*" process),
- claim 3 and page 6, lines 25 to 29 (β -OH less than "0.4" achieved solely by selection of batch constituents, without reference to "*process control variables*"),
- claim 5, page 6, lines 2 to 6, page 11, line 10, and page 14, lines 21 to 23 (glass is "*contacted with Pt or Pt alloy during melting or forming*"),
- page 6, line 30, to page 7, line 5; page 5, line 31 to page 6, line 2; claim 9 (maximum As₂O₃ content of "0.02" mol percent),
- claims 13 and 14 (specific composition and properties of the glass),
- page 6, lines 13 to 21 (definition of the method used for determining β -OH; absorbance measured at a wavelength "*of*" 2809 nm and at the reference wavelength "*of*" 2600 nm).

6.1.2 For the board, the deletion of the indication concerning the reference wavelength, i.e. of the expression "*from a region of no hydroxyl adsorption*" from claim 1 does not amount to an extension of the

protection conferred, as alleged by appellant II. On the contrary, considering the other amendments to the wording of claim 1 (e.g. brackets around wavelength values removed, use of definite article "*the*" and the preposition "*of*"), the two wavelengths to be used in determining the transmittance values T_1 and T_2 are now unequivocally defined in claim 1 in the narrowest manner and in full accordance with the corresponding indications in the application as filed (page 6, lines 9 to 24).

6.1.3 Present dependent claim 3 is based on claim 4 of the application as filed.

6.1.4 The board is satisfied, and it was not disputed, that the amendment of granted product claim 30 into present use claim 10 is based on the content of the application as filed (page 1; lines 8 to 10; claims 24 to 32) and does not imply an extension of the protection conferred.

6.1.5 For the board, the remaining amendments, i.e. the deletion of several method claims, the adaptation of the numbering, back-references, and the deletion of all granted product claims do not, by their very nature, add subject-matter that was not disclosed in the application as filed or lead to an extension of the protection conferred by the patent.

6.1.6 In the board's judgment, the claims according to auxiliary request 1 are thus not objectionable under Article 123 (2) or (3) EPC.

6.2 Clarity

6.2.1 Appellant II objected to the clarity of the feature "*essentially free of alkali metal oxide*" comprised in present claim 1. The objected feature was, however, already present in dependent claim 21, and the features of the latter were fully incorporated into present claim 1.

6.2.2 In accordance with the established case law of the boards of appeal (see e.g. T 301/87, OJ 1990, 335; point 3.8 of the reasons), the objection of appellant II concerning the lack of clarity of said feature is disregarded since lack of clarity (Article 84 EPC) is not a ground for opposition pursuant to Article 100 EPC and since the objection in question does not arise from the amendment.

7. Sufficiency of disclosure

7.1 The only objections under Article 100(b) EPC maintained by appellant II in the appeal procedure concerned the features "*free of gaseous inclusions*" and the "*liquidus viscosity*" range contained in the independent product claim according to inter alia the main request. However, the instant auxiliary request 1 comprises no such product claims and none of the remaining claims contain a reference to said features. So said objections became obsolete. Moreover, at the oral proceedings, both the respondent and appellant II expressly confirmed that they had no objections under Article 100(b) EPC against auxiliary request 1.

7.2 The board is also satisfied that the patent discloses the claimed invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC).

8. Novelty

8.1 Documents D1a and D1

8.1.1 The US patent D1a and the corresponding European patent application D1 disclose glass compositions with chemical and physical characteristics rendering them especially suitable for use as substrates in flat panel display devices (D1a: column 1, lines 33 to 38). The oxide composition, strain point and thermal expansion of the glass substrates according to D1a/D1 (D1a: claim 1) meet the specifications according to present claim 1.

8.1.2 D1a mentions that the described glass compositions (D1a: claim 1) are suitable for being formed into thin sheets by the overflow downdraw technique (D1a: column 6, lines 1 to 14). However, the examples of D1a describe laboratory experiments according to which such glass compositions were cast as slabs which were then tested for their properties (D1a: column 5, line 47, to column 6, line 7; column 7, column 57 to 59). It is indicated in D1a (column 6, lines 14 to 20; column 8, lines 53 to 56) that "arsenic and/or antimony in amounts of 0-1% and 0-0.5%, respectively, were added to each batch to perform their customary function as fining agent" and "the small residual remaining in the glass has no substantial effect upon the properties of the glass".

- 8.1.3 From said passages, the skilled person gets the express instruction to add either arsenic or antimony, or both, as a fining agent. However, the board observes that the only examples in D1a for which the respective As_2O_3 and Sb_2O_3 contents of the glass are actually reported (see table I of D1a) all contain both types of oxides, and in particular 0.3 parts by weight on oxide basis As_2O_3 , which amount undisputedly corresponds to an As_2O_3 content in mole-% on oxide basis which is significantly higher than the maximum value of 0.02 prescribed by present claim 1.
- 8.1.4 Documents D1a/D1 do not address the water content or the corresponding β -OH values of the sheet glasses disclosed therein. Moreover, the batch components actually used in the preparation of the glass slabs according to the examples are not specified. The passage of D1a (column 5, from lines 34 onward) does not expressly mention water as being part of the batch ingredients ("oxides or other compounds") used. However, for the board, this does not necessarily mean that said ingredients, including the carbonates SrCO_3 and CaCO_3 which are mentioned as possible components as in the patent in suit, or the glass melt formed had to be water-free, as alleged by appellant II. D1a is silent about any drying or dewatering measures taken in order to bring the water content of the glass down to a low, controlled level. Moreover, even assuming that these carbonates, if used as batch components, contributed to reducing the water content of the composition as alleged by appellant II, it has not been shown that a β -OH value of less than 0.4 would inevitably be obtained in each such case.

8.1.5 In view of the above analysis, the board concludes that D1a/D1 does not directly and unambiguously disclose a downdraw method with all the features of present claim 1, or the use of glass obtained by such a method and having all the properties recited in claim 1, and in particular a β -OH value of less than 0.4 and less than 0.02 mole % arsenic expressed as As_2O_3 .

8.2 Document D17

8.2.1 Document D17 discloses the formation of alkali-free sheet glass for use as a substrate for flat panel displays and mentions the desirability of the absence of internal or surface defects such as bubbles or inclusions. Preferably, As_2O_3 will not be incorporated except for an amount unavoidably included as an impurity. Reference is made in particular to the following parts of D17: claims 1, 2, 4, 6, 7 and 10; page 2, first paragraph and lines 9, 10 and 17; page 3, lines 20 to 22; page 4, lines 6 to 7. Almost all of the specific glasses disclosed in tables I, II and III of D17 meet the specifications recited in present claim 1 in terms of their oxide composition, strain point and thermal expansion coefficient.

8.2.2 However, the glass substrates according to D17 are expressly intended to be formed by a float process (see page 2, line 4; page 3, line 15; page 4, lines 16 and 17). Drawing processes are not even mentioned. It remained undisputed that a downdraw process requires higher viscosities at liquidus temperature than a glass for a float process, as was pointed out by the patent proprietor in the course of the opposition procedure (letter of 3 June 2005, point 7.9). Neither did

appellant II argue that any of the display glasses exemplified in D17 actually had a composition with a liquidus viscosity suitable for a sheet forming downdraw process. From the data contained in D17, it cannot be directly and unambiguously inferred that As_2O_3 free glasses disclosed would have a liquidus viscosity making them suitable for downdraw processes.

8.2.3 Moreover, D17 is also silent about the water content or the β -OH value of the glasses described and does not contain any quantification of the amounts of bubbles contained in the glass either.

8.2.4 In the board's judgement, document D17 does not directly and unambiguously disclose a downdraw process according to present claim 1, or the use, according to claim 10, of a glass obtained by such a process and having the properties prescribed by claim 1.

8.3 Alleged prior use of "FLORA" laptop computer

8.3.1 According to the examination report D14 (page 1, second paragraph; page 2, last paragraph; page 4, Table 2), the two glasses forming the display of the laptop computer allegedly made available to the public contained no detectable gas bubbles and the measured β -OH values are 0.266 and 0.272 (measuring wavelength not indicated). According to the analytical results presented in Table 1 of D14, the glasses are of the aluminoborosilicate type and contain very small amounts of the alkali metal oxides Na_2O and K_2O (less than 0.2 and 0.02 mole %, respectively) and less than 0.01 mole-% As_2O_3 .

8.3.2 However, D14 is silent about values for the strain point and the thermal expansion coefficient of the two glasses. Moreover, concerning the method used for fabricating the investigated glasses, it is expressly indicated in D14 (page 3, second paragraph) that based on an investigation on central strain "it is likely that the glasses are floated" rather than by an "overflow fusion", i.e. downdraw process (see patent in suit, page 2, line 45). Finally, appellant II did not show that the display glasses of the "FLORA" computer investigated have a composition with a liquidus viscosity sufficient for making it suitable for a sheet-forming downdraw process.

8.3.3 Therefore, in the board's judgment, the analytical results reported in document D14 are not sufficient to establish that the sheet glass used in the display investigated was obtained by a method according to claim 1 and had the properties required by claim 1.

8.3.4 Consequently, even assuming for the sake of argument that the examined "FLORA" laptop computer (or another computer of the "FLORA" series identical in construction) had actually been made available to the public before the priority date of the patent in suit by means of sales as alleged by appellant II, such a prior use would not amount to a disclosure of the subject-matter of present claims 1 and 10.

8.4 Document D11

8.4.1 This document relates to products made of specific glass-**ceramic** materials with a high transmission for near infra-red radiation and being suitable for various

high-temperature applications (see claims 1 and 8; column 4, lines 14 to 27 lines column 5, lines 47 to 50).

- 8.4.2 The glass-ceramic materials of D11 differ from the glass sheets made according to present claim 1 at least
- in that they do not contain B_2O_3 ,
 - in that they contain significant amounts of at least two alkali metal oxides, namely Li_2O (at least 2.5 weight-%) and K_2O (at least 0.2 weight-%), and
 - in that they have a lower thermal expansion coefficient of at most $2 \times 10^{-6}/^{\circ}K$.

In view of the amounts of alkali metal oxides deliberately added, the compositions according to D11 are not "*essentially free of alkali metal oxides*" in the sense of present claim 1.

- 8.4.3 D11 (column 5, lines 31 to 38) generally refers to processes for preparing the articles by drawing ("Ziehen") a glass composition and then ceramising it. It was not disputed that glass articles including plates or sheets may also be obtained by generally known horizontal or upward drawing techniques. A downdraw sheet forming process is not specifically mentioned in D11, let alone a process involving contact of the glass with platinum or a platinum alloy.

- 8.4.4 For the board, the use of the glass-ceramic materials according to D11 as a window element having a high infrared transmission (claim 8: "Sichtscheibe"; "Fenster für IR-Detektoren") cannot be equated to a use "*as a substrate in a flat panel display device*" of a glass sheet obtained by the method according to claim 1.

8.4.5 Hence, D11 does not directly and unambiguously disclose a method according to claim 1, or the use, according to claim 10, of glasses made according to said method and having the properties required by claim 1.

8.5 For the above reasons, the subject-matter of claims 1 and 10 and, consequently, of claims 2 to 9 dependent on claim 1, is novel (Articles 52(1) and 54(1)(2) EPC).

9. Inventive step

9.1 The invention concerns a method of making aluminoborosilicate glass sheets and the use of said sheets in flat panel displays.

9.2 The board concurs with the respondent in that the closest prior art is constituted by the glass which was undisputedly commercially available under the code "1737F" before the earliest priority date (19.07.1996) claimed by the patent in suit, said glass having the properties described in document D3, a "Material Information" from Corning Inc., issued "1/1996".

9.2.1 According to D3 the glass sheet is to be used as substrate for active matrix flat panel displays. As apparent from D3 (see page 1, first paragraph), the material referred to is a "fusion drawn sheet". For the board, D3 thus implicitly discloses a sheet forming downdraw method (see e.g. page 3, line 18 of the patent in suit) as referred to in the preamble of present claim 1.

9.2.2 It can also be taken from D3 that the strain point (page 2, section "Viscosity": 666°C) and the thermal

expansion (page 1, section "Thermal Expansion": $37.6 \times 10^{-7} / ^\circ\text{C}$) lie within the ranges according to present claim 1. Moreover, it is expressly indicated in D3 that said glass has an alkali content of less than 0.1 %, i.e. that it is essentially free of alkali metal oxides. D3 does not address the β -OH value of the glass. However, from the transmittance curve on page 5 of D3, the respondent had calculated a β -OH value of about 0.31, but in any case lower than the upper limit of 0.4 according to present claim 1, in the manner set out in documents D3/1 and D3/2 and on page 6 of its statement of facts and arguments filed in support of its opposition. The board sees no reason for challenging the calculation method or the results obtained therewith, which in any case were never contested by Appellant I.

9.2.3 It remained undisputed that the chemical composition of the "1737F" glass according to D3, in terms of mole % on oxide basis, essentially corresponds to the one of the glass according to example 4 of the patent in suit (see table 1A) and thus falls within the compositional ranges recited in present claim 1, except for its much higher arsenic content.

9.3 Taking the preparation method, the properties and the use of the glass sheets referred to in D3 as the closest prior art, the technical problem consists in providing a further downdraw method for obtaining aluminoborosilicate glass sheets equally suitable for being used as a substrate in a flat panel display device, without having to employ arsenic as a fining agent (see page 3, lines 31 and 32, of the patent in suit).

- 9.4 As a solution to the problem defined above, the patent in suit proposes a preparation process according to present claim 1 involving melting and forming the glass sheets by a downdraw method in which the glass is contacted with platinum or a platinum alloy during the melting or forming process, which process is in particular characterised in that the batch constituents are selected so that the resultant glass contains less than 0.02 mole percent arsenic expressed as As_2O_3 , and the $\beta\text{-OH}$ of said glass is below 0.4 mm^{-1} , where $\beta\text{-OH} = (1/X)\log_{10}(T_1/T_2)$ where X is the thickness in millimetres of a sample of the glass, T_1 is the sample transmittance at the reference wavelength of 2600 nm and T_2 is the minimum sample transmittance of the hydroxyl absorption wavelength of 2809 nm.
- 9.5 The question is whether the technical problem has been solved by said solution.
- 9.5.1 The experimental data disclosed in the examples of the patent in suit show that essentially arsenic free glass sheets having all the properties required for being used as substrates for flat panel displays may be obtained by means of the claimed process.
- 9.5.2 In particular, the glass sheet according to example 3 (see [0029] and Table I), obtained by a downdraw method involving contact of the glass with a platinum alloy delivery system, not only meets the requirements of claim 1 in terms of its chemical compositions, its high strain point (664°C) and hence low thermal shrinkage and its coefficient of thermal expansion ($36.6 \times 10^{-7}/^\circ\text{C}$) matching silicon in thermal expansion, but also in that

it has a β -OH value (0.358 mm^{-1}) and contains no added arsenic.

- 9.5.3 From a comparison of examples 1, 2 and 3, it can be seen that in glasses of similar composition containing no arsenic, using the same measuring method, the amount of gaseous inclusions increases dramatically from 0.57 to 4.54 and even 33.5 Inc/kg when the β -OH value of the glass increases from 0.358 to 0.41 and 0.481, i.e. to values above the upper limit of 0.4 specified in present claim 1.

A further comparison shows that the amount of gaseous inclusions found in the glass of example 3 (0.57 Inc/kg) is of the same order of magnitude as in the glass of example 4 (0.46/kg) which has a chemical composition closely corresponding to the one found in the prior art sheet glass referred to in D3. The board also observes that example 4 illustrates that in the presence of arsenic, the water content or β -OH value are less critical in terms of the resulting amount of gaseous inclusions in the glass obtained.

- 9.5.4 Example 3 (the only one according to the invention) thus illustrates that when the water content of a glass having the chemical composition and physical properties (thermal expansion coefficient and strain point) prescribed in claim 1 is kept at a low level as expressed by a β -OH value of less than 0.4, the sheet glass obtained will contain a low amount of gaseous inclusions comparable to the amount in previously available products (e.g. according to D3), despite it being essentially arsenic free (no arsenic fining agent is added), and despite the use of a platinum alloy

metal delivery system. In view of its combined properties, a glass obtained by the method as used according to example 3 is thus as suitable as the glass according to D3 for being used as a substrate in flat panel display device.

9.5.5 Hence, the board is satisfied - and this was undisputed - that the technical problem stated above has been effectively solved by the claimed solution.

9.6 Hence, it remains to be decided whether or not the claimed solution was obvious in view of the prior art.

9.7 The feature "*contacted with platinum or platinum alloy*"

It is noted that the use of an apparatus wherein the melt is contacted with platinum or a platinum alloy in the fabrication of glass sheets for flat panel display application by a downdraw method is well known in the art and can thus not, as such, contribute to render the claimed subject-matter inventive. In this respect, reference is made to page 3, lines 17 to 21, of the patent in suit and to document D9, page 178, right-hand column, second paragraph).

9.8 Document D3

This document does not contain any information pointing towards possible ways of reducing the arsenic content without detrimental effects on other desired properties.

9.9 Documents D1a/D1

9.9.1 These two corresponding documents of similar content

disclose that glasses having a chemical composition and physical properties like the glass according to D3 can generally be formed into sheets suitable for use in flat panel displays by means of the suggested downdraw technique (D1a: column 6, lines 7 to 14). In view of their intended use, the skilled person understands that the sheets to be obtained should contain a low amount of gaseous inclusions.

9.9.2 However, the documents D1a/D1 do not address the issue of water content or the β -OH value and its possible influence on the resulting amount of gaseous inclusions in the glasses obtained when performing the suggested downdraw method using platinum- or platinum alloy-based equipment and adding only antimony as a fining agent. Consequently, the documents D1a/D1 do not teach the undertaking of measures to ascertain that the β -OH value of the glass will be low enough whenever no arsenic is used.

9.9.3 As pointed out by appellant I, the documents D1a/D1 do not contradict the findings in the application as filed (page 5, lines 8 to 16) concerning the difficulties encountered when performing such a process without relying on arsenic as a fining agent. Neither was it disputed that, due to these difficulties also addressed in points 4 to 6 of D20, essentially arsenic-free glasses with a too high water content or β -OH value will contain an unacceptably high amount of gaseous inclusions, considering the intended purpose of the sheets according to D1a/D1.

9.9.4 Hence, for the board, nothing in documents D1a/D1 suggests that the replacement of arsenic by antimony in

the preparation of a fusion drawn glass sheet according to D3, when using platinum- or platinum -based equipment, would inevitably lead to results equally acceptable in terms of the resulting amount of gaseous inclusions irrespective of the β -OH value of the glass.

- 9.9.5 The respondent also argued that from a comparison of examples 1 and 4 of the patent in suit, differing only in terms of the fining agent used, it could be derived that the replacement of As_2O_3 by Sb_2O_3 in a glass according to D3 ("1737F"; β -OH value of about 0.31) would inevitably lead to only a slight increase of the β -OH value to about 0.34 in the resulting glass, i.e. to a value still within the range according to claim 1.

The board does not accept this argument since, as pointed out by appellant I, there is no proof for a simple relationship between the β -OH value and the type and amount of fining agent used. By the way, adding Sb_2O_3 is not mentioned as a way of reducing the β -OH value of the glass in the patent in suit (see [0015], but only as a fining agent (page 3, lines 42 to 45; page 4, lines 27 to 30

- 9.9.6 The board thus concludes that even considering the teaching of D1a/D1 the skilled person could not arrive at a method according to claim 1 in an obvious manner.

9.10 Document D11

- 9.10.1 As already indicated in detail under points 8.4.1 to 8.4.5 above, document D11 relates to the fabrication of glass-ceramic articles. The articles are made of materials which are quite different from the glass

obtained by the method according to present claim 1. The applications of these articles envisaged in D11 are not in the field of substrates for flat panel display devices. Rather, they relate to applications in articles requiring a high near infrared transmission, e.g. cooking plates or IR-sensor windows.

9.10.2 In view of all these substantial differences, the board does not accept the arguments of appellant II that the skilled person confronted with the specific technical problem stated above would turn to and consider the contents of this document at all.

9.10.3 Even assuming the skilled person would actually consider the contents of D11, he would not be incited to modify the process for making the glass sheets according to D3 in a manner leading to the method of present claim 1. As appellant II rightly pointed out, D11 discloses fining with antimony but without arsenic and refers to chemical and physical dewatering of the glass melts processed in order to improve the near infrared transmission of the articles, e.g. by adding halogen compounds or applying vacuum to the melt.

However, for the board, this information in D11 does not suggest to the skilled person not knowing the present invention, that by making sure that the water content and hence the β -OH value are sufficiently low in a process according to the closest prior art, glass sheets having all the properties of the product according to D3 and a comparably low amount of gaseous inclusions could be obtained without having to use arsenic as a fining agent.

9.11 Document D4

9.11.1 D4 relates to methods for producing glasses which are "excellent in bubble-free homogeneity" wherein a metal halide and/or a tin compound is used as the main fining agent instead of the widely used As_2O_3 and Sb_2O_3 , which are toxic and environmentally problematic (D4/1: abstract, paragraphs [0002] to [0004]).

9.11.2 It must, however, be noted that the types of glass exemplified in D4 are very different from the glasses according to D3 or D1a/D1. D4 describes glasses with a relatively high alkali metal oxide content which contain no boron oxide or no/low aluminium oxide (D4/1: example in paragraph [0013], examples 1 to 3 and 6 in Table 1), as well as low-silica or non-silica glasses (D4/1: examples 4, 5 and 7 in Table 1; examples 1 to 4 in Table 2).

9.11.3 Moreover, the properties of the glasses were measured on cast glass slabs (D4/1: page 6, lines 7 to 8), and the problems associated with downdraw methods used in producing sheets having a composition and properties as the ones according to D3 are not addressed.

9.11.4 Nothing in document D4/1 suggests that in the preparation of a glass sheet according to D3 by fusion drawing, a replacement of arsenic by the fining agents proposed in D4/1 could lead to results of equally acceptable quality, in particular when using platinum-based equipment. Neither does document D4/1 contain information from which the skilled person could infer that by bringing down the water content of the glass to a corresponding β -OH value of less than 0.4, the

replacement of arsenic by other fining agents becomes feasible.

9.12 According to an alternative approach, appellants I and II considered that documents D1a/D1 could be considered to represent the closest prior art.

9.12.1 However, as already set out above, none of D1a/D1, D4 and D11 suggest that by making sure that the water content or β -value of a glass composition according to D1a/D1 is at the low level required by present claim 1, a glass sheet of a quality, in terms of gaseous inclusions, comparable to the one of the previously known product according to D3 can reliably be obtained without having to add arsenic as a fining agent when operating the downdraw process in which the glass is in contact with platinum or a platinum alloy during melting or forming.

9.12.2 Hence, even when starting from the specific disclosure in D1a/D1 as closest prior art, the skilled person could only arrive at a method according to present claim 1 on the basis of considerations involving hindsight. It follows that the method according to claim 1 is not derivable from the teachings of the prior art documents referred to above and is not, therefore, obvious.

9.13 The board is satisfied that the use, according to claim 10, of a glass produced by the method according to claim 1 is not obvious either since the prior art does not suggest the provision of a downdrawn glass sheet having all the properties recited in claim 1 and being suitable as a substrate in flat panel display

devices, which is both essentially arsenic-free and has a β -OH value of less than 0.4.

9.14 The board is satisfied that none of the other prior art documents cited in the opposition and appeal procedures contain additional information which could render the claimed subject-matter obvious.

9.15 In the board's judgement, the subject-matter of claims 1 to 10 thus involves an inventive step (Articles 52(1) and 56 EPC).

Procedural issues

10. Request for referral of the question of appellant II to the Enlarged Board of Appeal

10.1 According to Article 112(1)(a) EPC the board of appeal shall refer any question to the Enlarged Board of Appeal, if it considers that a decision is required in order to ensure uniform application of the law, or if a point of law of fundamental importance arises. For the board, the request of appellant II for referral of its question does not meet these conditions for the following reasons.

10.1.1 No fundamental point of law arose, since the answer to the question of appellant II submitted during the oral proceedings (see point XIII above) can be deduced from the EPC and is negative, as set out under point 2 above. Moreover, appellant II has not invoked and the board is also not aware of any contrary decisions which would justify a ruling by the Enlarged Board of Appeal with a view to ensuring uniform application of the law.

10.2 Since in the board's judgement no such ruling is needed, the request of appellant II for referral of its question is rejected.

11. Remittal

11.1 At the oral proceedings, appellant II no longer requested the remittal of the case to the department of first instance. The mere fact that appellant I filed a new set of claims that was admitted to the proceedings (see points 3 to 3.3 above) does not preclude the board from taking a decision on the merits of these claims (see e.g. decision T 0908/07 of 16 May 2008, point 5.1.7 of the reasons).

11.2 In the present case, the board decided to remit the case to the department of first instance in the exercise of its discretion under Article 111(1) EPC after having decided on the issues concerning the claims according to auxiliary request 1. However, the board did not decide the question of whether or not the amendments in the description pages filed together with the claims according to the first auxiliary request suffice to bring the description in conformity with said claims.

Order

For these reasons it is decided that:

1. The appeal of appellant II is rejected as inadmissible.

The request of appellant II to refer its question filed at the oral proceedings to the Enlarged Board of Appeal is rejected.

2. The decision under appeal is set aside.

3. The case is remitted to the department of first instance with the order to maintain the patent on the basis of claims 1 to 10 according to auxiliary request 1 filed at the oral proceedings and a description to be adapted.

The Registrar

The Chairman

C. Vodz

G. Rath