



Action n°: UPC 337/2025  
Revocation action  
Central Division (Section Munich)

**Decision**  
**of the Court of First Instance of the Unified Patent Court**  
**Central Division (Section Munich)**  
**issued on 24 February 2026**

HEADNOTES:

1. A realistic starting point is typically a prior art disclosure as a whole. Absent a specific reason or pointer in the disclosure itself (or based on common general knowledge) to do so, the selection of a particular example composition as a “starting point”, merely because it happens to come “closest” to the claimed subject matter in terms of structural components, bears the risk that such selection itself already involves hindsight.
  
2. Where the features of a patent claim, in an interdependent way, even if they are not synergetic in the sense of having a special combination effect, provide a solution to the objective problem, ignoring these interdependencies and dividing the objective problem up into separate problems amounts to hindsight reasoning which is to be avoided in the assessment of inventive step.

KEYWORDS:

Method claim. Added matter. Novelty. Disclosure of numerical ranges. Inventive step. Selection of starting point. Interdependency. Interdependent claim features. Inventive concept underlying the invention. Motivation. Pointer. Predictability. Reasonable expectation of success.

CLAIMANT:

**TCL EUROPE SAS**, 9-15 rue Rouget de Lisle - 92130 - Issy les Moulineaux - France

represented by: Andreas Obermeier of Bird & Bird LLP.

DEFENDANT:

**Corning Incorporated**, One Riverfront Plaza, Corning - 14831 - New York – United States of America

represented by: Marcus Grosch of Quinn Emanuel Urquhart & Sullivan LLP.

PATENT AT ISSUE

European Patent number 3 296 274.

PANEL/DIVISION

Panel 1 of the Central Division (Section Munich).

DECIDING JUDGES

This decision has been delivered by András Kupecz (as Presiding judge and judge-rapporteur), Daniel Severinsson (legally qualified judge) and Rudi Goedeweck (technically qualified judge).

LANGUAGE OF THE PROCEEDINGS:

English.

SUBJECT-MATTER OF THE PROCEEDINGS

Revocation action.

ORAL HEARING

■February 2026.

## SUMMARY OF THE FACTS

1. On 22 April 2025, TCL EUROPE SAS (“the Claimant”) brought a revocation action in the Central Division (Section Munich) (“CD Munich”) of the Unified Patent Court (“UPC”) against Corning Incorporated (“the Defendant”) in relation to EP 3 296 274 B1 (“the Patent”).
2. The application date of the Patent is June 28, 2006, claiming the priority of US provisional application US 20050694478 P of June 28, 2005. The Patent is a divisional application of parent application EP 1 899 275 A1 (EP ‘275). EP ‘275 has been published as WO 2007/002865 A1 (Exhibit D2). The mention of the grant of the Patent was published on 26 April 2023.
3. The Patent is in force in the UPC Contracting Member States in which the patent has effect France (FR) and Germany (DE).
4. The Patent, which was granted in the English language, is entitled “*Fining of Boroalumino Silicate Glasses*” and has the following claims:
  1. A method for producing alkali-free glass sheets by a downdraw process comprising selecting, melting, and fining batch materials so that the glass making up the sheets comprises in mole percent on an oxide basis:

SiO <sub>2</sub> :	64.0-71.0
Al <sub>2</sub> O <sub>3</sub> :	9.0-12.0
B <sub>2</sub> O <sub>3</sub> :	7.0-12.0
MgO:	1.0-3.0
CaO:	6.0-11.5
SrO:	0-1.0

BaO: 0-0.1, and, on an oxide basis, has:

a  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio greater than or equal to 1.0, where  $[\text{Al}_2\text{O}_3]$  is the mole percent of Al<sub>2</sub>O<sub>3</sub> and  $\Sigma[\text{RO}]$  is the sum of the mole percents of MgO, CaO, SrO, and BaO;

wherein the fining is performed purposely using neither arsenic nor antimony; and

wherein the fining is performed in the presence of tin in an amount such that the finished glass comprises at least 0.01 mole percent SnO<sub>2</sub>.

2. The method of Claim 1 wherein the glass making up the sheets is substantially free of BaO.
3. The method of Claim 1 or 2, wherein the fining is performed in the presence of tin in an amount such that the finished glass comprises less than or equal to 0.15 mole percent SnO<sub>2</sub>.

## POINTS IN DISPUTE AND REQUESTS OF THE PARTIES

5. The Claimant argues that the Patent is invalid on the grounds that its subject-matter is not patentable within the terms of Arts. 52 to 57 EPC (Art. 65(1),(2) of the Agreement on a Unified Patent Court (“UPCA”) in combination with Art. 138(1)(a) of the European Patent Convention (“EPC”)), since it lacks novelty (Art. 54 EPC) and is not based on an inventive step (Art. 56 EPC); the Patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Art. 65(1), (2) UPCA in

combination with Art. 138(1)(b), Art. 83 EPC); and that the subject-matter of the Patent extends beyond the content of the earlier application as filed (Art. 65(1), (2) UPCA in combination with Art. 138(1)(c), Art. 123(2) and 76(1) EPC).

6. Based thereon, the Claimant requests:

- 1) to revoke the Patent in its entirety for the territory of the UPC member states Germany and France.
- 2) to order the Defendant to pay the costs of the proceedings (Art. 69(1) UPCA).

7. The Defendant requests that:

- The revocation action is dismissed and the Patent is maintained as granted (main request).
- In the alternative conditionally, in case the main request is not granted, that the revocation action is dismissed and the Patent is maintained on the basis of any of auxiliary requests 1 to 20.
- The auxiliary requests shall be considered in numerical order, with each auxiliary request only to be considered if the Court finds the preceding auxiliary request not allowable for any reason.
- The Claimant has to bear the costs of the proceedings.

8. Specifically with respect to the application to amend, the Claimant further requests to dismiss the Defendant's application to amend the patent in suit and thus reject all auxiliary requests 1-20,

9. The grounds and defences as brought forward by the parties will, to the extent relevant for this decision, be discussed in detail below.

## GROUNDS FOR THE DECISION

10. The admissible revocation action is not well-founded and must be dismissed. The subject matter of the Patent does not extend beyond the content of the application as filed. The subject matter claimed in the Patent is sufficiently disclosed, is novel and does not follow from the state of the art in an obvious way.

### I. (International) jurisdiction and admissibility of the revocation action

11. Pursuant to Article 32(1) (d) UPCA, the UPC shall have exclusive competence for actions for revocation of (European) patents. In view of this exclusive competence, and since no opt-out from the exclusive competence of the Court in relation to the Patent is in effect (cf. Article 83(3) UPCA), the UPC – as a common court of the Member States to the UPCA (Art. 71a EU Regulation Brussels recast) – has international jurisdiction based on article 24(4) in connection with Art. 71b of Regulation Brussels I recast.
12. The CD Munich is competent in respect of the present Revocation action on the basis of Art. 33(4) EPC in connection with R. 17.3 RoP and Annex II to the UPCA.
13. The revocation action is directed against the proprietor of the Patent (Rule 42 RoP). Thus, no concerns as to the admissibility exist in this respect.

### II. The Patent and its interpretation

14. According to its description, the Patent relates to alkali-free, boroalumino silicate glasses exhibiting desirable physical and chemical properties for use as substrates in flat panel display devices, such as, active matrix liquid crystal displays (AMLCDs). The Patent relates *inter alia* to the fining of such glasses (also referred to in the art as “refining”) (see paragraph [0001] of the description, hereinafter only indicated with the respective paragraph numbers).
15. Further, according to the description, the manufacturing of these AMLCD displays is extremely complex, and the properties of the substrate glass are extremely important. First and foremost, the glass substrates used in the production of AMLCD devices need to have their physical dimensions tightly controlled. The downdraw sheet drawing process and, in particular, the fusion process described in U.S. Patents Nos. 3,338,696 (Dockerty) and 3,682,609 (Dockerty), is one of the few processes capable of delivering glass sheets which can be used as substrates without requiring costly post forming finishing operations, such as lapping and polishing. The fusion process requires relatively high liquidus viscosities, preferably greater than 10 k Pa·s (100,000 poises), more preferably, greater than 15 k Pa·s (150,000 poises), see par. [0006].
16. The description mentions in par. [0011] that AMLCD manufacturers are finding that both the demand for larger display sizes and the economics of scale are driving them to process larger

sized pieces of glass. This raises concerns with elastic sag, which is dependent upon glass density and Young's modulus, and which becomes a particularly critical issue with larger sheet sizes, impacting the ability to load, retrieve, and space the glass in the cassettes used to transport the glass between process stations (par. [0012]). In addition, the increasing sizes of substrates leads to greater challenges in terms of manufacturing defect-free glass sheets. Because of the small sizes of sub pixels, substrates used for display applications must be essentially completely defect free (par. [0013]).

17. According to par. [0017], it would be desirable to provide a glass composition for display devices having a low density to alleviate difficulties associated with larger sheet size, a liquidus viscosity greater than or equal to 10 k Pa·s (100,000 poises) to allow manufacture by, for example, the fusion process. In addition, it would be desirable for the glass to have a thermal expansion coefficient (CTE) in the range of  $28-34 \times 10^{-7}/^{\circ}\text{C}$ . Furthermore, it would be advantageous for the glass to have a strain point greater than  $650^{\circ}\text{C}$ , and for the glass to be resistant to attack from etchant solutions. It would also be desirable for the glass to have a low gaseous inclusion level when commercially manufactured without the use of arsenic and/or antimony as fining agents.
18. These objectives are purportedly solved by the method claimed in claim 1 of the Patent which, for reference only, can be broken down into the following features, whereby the Court follows the feature breakdown as used by both parties:

1 A method for producing alkali-free glass sheets by a downdraw process comprising:

1.1 selecting, melting, and fining batch materials so that the glass making up the sheets comprises in mole percent on an oxide basis:

SiO<sub>2</sub>: 64.0-71.0

Al<sub>2</sub>O<sub>3</sub>: 9.0-12.0

B<sub>2</sub>O<sub>3</sub>: 7.0-12.0

MgO: 1.0-3.0

CaO: 6.0-11.5

SrO: 0-1.0

BaO: 0-0.1

1.2 on an oxide basis, has: a  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio greater than or equal to 1.0 where  $[\text{Al}_2\text{O}_3]$  is the mole percent of Al<sub>2</sub>O<sub>3</sub> and  $\Sigma[\text{RO}]$  is the sum of the mole percents of MgO, CaO, SrO, and BaO;

1.3 wherein the fining is performed purposely using neither arsenic nor antimony; and

1.4 wherein the fining is performed in the presence of tin in an amount such that the finished glass comprises at least 0.01 mole percent SnO<sub>2</sub>.

19. The parties debated about the interpretation of some of these features, which therefore requires discussion.
20. The principles applicable to claim construction have been set out by the UPC Court of Appeal in its final order in UPC\_CoA\_335/2023 (Order of 26 February 2024, as rectified, *Nanostring/10x Genomics*). The patent claim is not only the starting point, but the decisive basis for determining the protective scope of a European patent under Art. 69 EPC in conjunction with the Protocol on the Interpretation of Art. 69 EPC. The interpretation of a patent claim does not depend solely on the strict, literal meaning of the wording used. Rather, the description and the drawings must always be used as explanatory aids for the interpretation of the patent claim and not only to resolve any ambiguities in the patent claim. However, this does not mean that the patent claim merely serves as a guideline and that its subject-matter also extends to what, after examination of the description and drawings, appears to be the subject-matter for which the patent proprietor seeks protection. The patent claim is to be interpreted from the point of view of a person skilled in the art. In applying these principles, the aim is to combine adequate protection for the patent proprietor with sufficient legal certainty for third parties. These principles for the interpretation of a patent claim apply equally to the assessment of the infringement and the validity of a European patent.
21. The skilled person always interprets features in the light of the claim as a whole (e.g. UPC\_CoA\_768/2024, order of 30 April 2025, *Insulet/EOfFlow*). From the function of the individual features in the context of the patent claim as a whole, the skilled person will deduce which technical function these features actually have individually and as a whole. With regard to the terminology used in a patent, this can lead to the skilled person attributing a meaning to a term that differs from its general usage. The patent specification can define terms independently and may thus represent its own lexicon, see e.g. LD Munich, UPC\_CFI\_248/2024, decision dated 22 August 2025 (*Brita SE/AQUASHIELD*); CD Munich, UPC\_CFI\_836/2024, decision dated 20 November 2025 (*BAUSSMANN/Raimund Beck*); CD Paris seat, UPC\_CFI\_309/2023, decision dated 5 November 2024 (*NJOY/Juul*).

#### The skilled person

22. The Defendant has defined the person skilled in the art as a person with an advanced degree in materials science, chemistry, or a comparable field of study, and several years of experience with the design, manufacturing, characterization, and testing of glasses and, in particular, oxide glasses. The Claimant did not put forward another definition of the skilled person and did not comment on the identity of the skilled person. The Court sees no reason to adopt a different definition of the skilled person than the Defendant.

### Interpretation of the claims from the perspective of the skilled person

23. According to **feature 1**, claim 1 is a method claim **for producing alkali-free glass sheets** by a downdraw process. The method thus serves a specific purpose (“**for**”), see LD Munich decision of 19 December 2025 UPC\_CFI\_437/2024, UPC\_CFI\_681/2024 (*GXD-Bio/Myriad*). The claimed method is for producing alkali-free glass sheets. The description explains in par. [0062] that the term “**alkali-free glass**” as used in the Patent is a glass having a total alkali concentration which is less than or equal to 0.1 mole percent, where the total alkali concentration is the sum of the Na<sub>2</sub>O, K<sub>2</sub>O, and Li<sub>2</sub>O concentrations. In the context of the Patent, the skilled person therefore understands that “alkali-free” does not mean that no alkali is present at all. As the description further explains in par. [0062], the glasses of the disclosure will also normally contain some alkali as contaminants. Neither the claim nor the description further define what is meant by a **glass sheet**. The skilled person understands that the sheets produced by the claimed methods are suitable for use as substrates for LCD displays (par. [0006]).
24. According to **feature 1**, the claimed method specifies that a **downdraw process** is used to produce the glass sheets. This confirmed by the description (e.g. paras. [0006], [0033], [0068], [0076] and [0082]). A downdraw process is used to convert molten glass into sheets suitable for AMLCD applications (par. [0055]). The skilled person knows that the term “downdraw process” typically refers to a method where melted glass passes through a nozzle flowing vertically downward and is pulled from below to form a glass sheet. This was commonly known at the priority date. The fusion process described in par. [0006] of the Patent, where molten glass overflows from a supply trough, flows down both sides, and rejoins at the tapered bottom, is considered as an example of a downdraw process (cf. par. [0033]). According to the description, downdraw is one of the few processes capable of delivering glass sheets which can be used as substrates without requiring costly post forming finishing operations (par. [0006]). In this context the Patent description refers to U.S. Patents Nos. 3,338,696 (Dockerty) and 3,682,609 (Dockerty), part of the state of the art and submitted as Exhibits D5 and D6 in these proceedings (see above).
25. The Court agrees with the Claimant that the Patent broadly addresses any kind of downdraw process, including fusion processes. Claim 1 is not limited to a particular kind of downdraw process. The Court also agrees with the Claimant that the use of the word “comprising” indicates that other steps are not excluded from the claimed method. Contrary to the submissions of the Claimant, however, this does not mean that the skilled person understands that the claimed downdraw process is not specified by *any* particular process step, parameter or condition.
26. In particular, the skilled person understands that relatively high liquidus viscosities are a prerequisite for downdraw processes. This is mentioned in the description (e.g. par. [0006], [0017], [0033] and [0055] and the Examples, e.g. par. [0076]). According to par. [0017], it would be desirable to provide a glass composition for display devices having a liquidus viscosity greater than or equal to 10 k Pa·s (100,000 poises) to allow manufacture by, for

example, the fusion process. The Claimant agrees that it was self-evident to the skilled person that the glass sheet must exhibit sufficient viscosity to withstand the mechanical strains inherent in the downdraw process, but states that there is no evidence that 100,000 poises reflects a critical technical limitation (par. 90 Reply to the Defence to Revocation). According to par. [0035], to be formed by a downdraw process, the glasses preferably have a liquidus viscosity which is greater than or equal to 10 kPa·s (100,000 poises), more preferably greater than or equal to 15 kPa·s (150,000 poises), and most preferably greater than or equal to 20 kPa·s (200,000 poises). In relation to the Examples, par. [0076] states that the glasses of Examples 1-43 can also be formed using downdraw techniques, such as the fusion technique. Thus, they have liquidus temperatures less than or equal to 1170°C and liquidus viscosities equal to or greater than 100,000, and in most cases, equal to or greater than 150,000 (underline CD). The Claimant has submitted a declaration (D24) of Dr. Ernst, filed in US Inter Partes Review proceedings between Caihong Display Devices Co., Ltd. et al. against the Defendant relating to a family member of the Patent. In par. 104 of the declaration Dr. Ernst states: “It is known in the field that for an alkali-free glass substrate to be fabricated using downdraw technique, the liquidus viscosity should be greater than or equal to 100,000 P (poise).” In the opinion of the Court, on the basis of the information in the description, in the light of the common general knowledge, even though the claim does not contain an exactly quantified limit for the viscosity of the glass making up the sheets, the skilled person will understand that a downdraw process (to which the claim is limited) requires a minimum viscosity. If the glass composition is not sufficiently viscous, it will not be suitable for a downdraw process in accordance with the claimed method. Based on the information in the description and the common general knowledge, the skilled person will expect glass compositions having a liquidus viscosity greater than or equal to 100,000 poises to be suitable for downdraw.

27. **Feature 1.1** requires the **selecting, melting, and fining** of **batch materials**. The skilled person recognizes that these are standard steps preceding the downdraw process. These steps are performed such that the final glass making up the sheets **comprises** the **oxides** in the ranges as specified in feature 1.1 of the claimed method:

**SiO<sub>2</sub>: 64.0-71.0**

Silicon dioxide serves as the basic **glass former** of the glasses of the disclosure. Its concentration is greater than 64 mole percent in order to provide the glass with a **density** and **chemical durability** suitable for a flat panel display glass, e.g., an AMLCD glass, and a liquidus temperature (**liquidus viscosity**) which allows the glass to be formed by a downdraw process (e.g., a fusion process) (see par. [0033]). The SiO<sub>2</sub> concentration is less than or equal to 71 mole percent to allow batch materials to be melted using conventional, high volume, melting techniques. When the concentration of SiO<sub>2</sub> goes above 71 mole percent, the 20 Pa·s (200 poise) temperature (melting temperature) generally rises above 1650°C, which is typically the upper limit for conventional melting processes. (par. [0036]).

**Al<sub>2</sub>O<sub>3</sub>: 9.0-12.0**

Al<sub>2</sub>O<sub>3</sub> is another **glass former** of the glasses of the disclosure. According to the Patent, an Al<sub>2</sub>O<sub>3</sub> concentration greater than or equal to 9.0 mole percent provides the glass with a low liquidus temperature and a corresponding **high liquidus viscosity**. The use of at least 9.0 mole percent Al<sub>2</sub>O<sub>3</sub> also improves the glass' **strain point** and **modulus**. In order to achieve an  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio greater than or equal to 1.00 (see below), the Al<sub>2</sub>O<sub>3</sub> concentration is kept below 12.0 mole percent (par. [0038]).

**B<sub>2</sub>O<sub>3</sub>: 7.0-12.0**

B<sub>2</sub>O<sub>3</sub> is both a **glass former** and a **flux** that aids **melting** and lowers the melting temperature. According to the Patent, to achieve these effects, the glasses of the disclosure have B<sub>2</sub>O<sub>3</sub> concentrations that are equal to or greater than 7.0 mole percent. According to the description, large amounts of B<sub>2</sub>O<sub>3</sub>, however, lead to reductions in strain point (approximately 10°C for each mole percent increase in B<sub>2</sub>O<sub>3</sub> above 7.0 mole percent), modulus, and chemical durability (par. [0039]).

**MgO: 1.0-3.0, CaO: 6.0-11.5, SrO: 0-1.0 and BaO: 0-0.1**

The **alkaline earth oxides** (at least MgO and CaO which are mandatory components, and, optionally, SrO and/or BaO) provide the glass with various properties important to **melting, fining, forming**, and ultimate use (par. [0043]). In relation to **MgO**, the description mentions that MgO is particularly important with regard to melting and fining. In addition, relative to the other alkaline earth oxides, the presence of MgO results in lower density and CTE, and a higher chemical durability, strain point, and modulus (par. [0057]).

28. The above ranges are in **mole percent on an oxide basis**. There is agreement between the parties that, for the skilled person, this is a standard way of expressing the amounts of oxides in a final glass sheet. The parties also agree that, generally, amounts of oxides in a glass may either be expressed in mole percent, as in the Patent, or in weight percent (wt.%). These can readily be converted based on the molecular weight of a component (as illustrated by the Claimant in par. 27 of the SoR, not disputed by the Defendant). The Court sees no reason to find differently. The description mentions in par. [0028] that the claimed ranges include the end points of the range. For example, when SiO<sub>2</sub> is specified to have a concentration of 64.0-71.0 mole percent on an oxide basis, the 64.0 and 71.0 values are included in the claimed values for the SiO<sub>2</sub> concentration.
29. The use of the word "**comprising**" indicates that also other components, in particular various other oxides may be present in the final glasses produced by the claimed method (see par. [0061]).

30. **Feature 1.2** requires that the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio is greater than or equal to 1.0 where  $[\text{Al}_2\text{O}_3]$  is the mole percent of  $\text{Al}_2\text{O}_3$  and  $\Sigma[\text{RO}]$  is the sum of the mole percents of the alkaline earth oxides  $\text{MgO}$ ,  $\text{CaO}$ ,  $\text{SrO}$ , and  $\text{BaO}$ . The ratio is obtained by dividing the sum of the alkaline earth oxides by the  $\text{Al}_2\text{O}_3$  concentration. The description explains that the  $\text{MgO}$  concentration in the glass and the glass'  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio are critical to the glass' performance and, in particular, are critical with regard to meltability and fining (par. [0044], [0057]-[0058], see also above in relation to  $\text{MgO}$ ).
31. **Feature 1.3** specifies that the **fining** is performed **purposely using neither arsenic nor antimony**. According to the literal meaning of feature 1.3 no arsenic and no antimony may intentionally be used for the fining step. At the priority date,  $\text{As}_2\text{O}_3$  was well-known as the most effective high temperature fining agent for AMLCD glasses. However,  $\text{As}_2\text{O}_3$  is poisonous and thus requires special handling during the glass manufacturing process. (par. [0064]). Against this background, the fining in the claimed method is performed purposely not using **arsenic**. This does not, however, mean that in the finished glass no arsenic can be present at all. The skilled person understands on the basis of the description that small amounts of arsenic can be present as a result of contaminants present in the batch materials and/or the equipment used to melt the batch materials (par. [0064]). In such cases, the finished glass will typically have at most 0.005 mole percent  $\text{As}_2\text{O}_3$  (also par. [0064]). The same applies to **antimony** which is purposely not used in the fining of the glass in the claimed method because of its poisonous properties. Also, for  $\text{Sb}_2\text{O}_3$ , the description states that finished glass will typically contain at most 0.005 mole percent as a result of contaminants. Contrary to what the Claimant argues with reference to par. [0063] of the description, where an example glass composition is described, the skilled person will not draw the conclusion that 0.05 mole percent of  $\text{As}_2\text{O}_3$  or  $\text{Sb}_2\text{O}_3$  may be present in the glasses produced by the claimed method. The skilled person rather understands these exemplary glasses to be outside of the scope of the claim because in order to produce these glasses,  $\text{As}_2\text{O}_3$  or  $\text{Sb}_2\text{O}_3$  are indeed (still purposely, but in a lower amount) used for fining because of their superior fining properties (cf. par. [0064], first sentence). The claimed method is explicitly limited to cases in which neither arsenic nor antimony is purposely used. The resulting finished glasses will typically have at most 0.005 mole percent of their oxides as a result of contaminants.
32. **Feature 1.4** specifies that the fining (feature 1.1) is performed **in the presence of tin** in an amount such that the **finished glass** comprises **at least 0.01 mole percent  $\text{SnO}_2$** . Feature 1.4 will not be read by the skilled person in isolation, but in the context of the claim as a whole (in light of the description and drawings). Doing so, the skilled person, knowing from feature 1.3 that no arsenic or antimony is purposely used, understands that instead the fining is performed in the presence of tin. The description teaches in par. [0066] that compared to  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$  fining, tin fining (i.e.,  $\text{SnO}_2$  fining) is less effective, but  $\text{SnO}_2$  is a ubiquitous material which has no known hazardous properties. The claim does not specify how much  $\text{SnO}_2$  must be used during the fining step. Instead, the claim requires that the fining is performed in presence of tin in an amount such that the finished glass comprises at least 0.01 mole percent  $\text{SnO}_2$ . It is left to the skilled person to determine the exact amount of tin

that is required during the fining to end up with a glass comprising a minimum amount of SnO<sub>2</sub> of at least 0.01 mole percent. The claim also does not exclude that tin fining can be used in combination with other fining techniques. For example, tin fining can be combined with halide fining, e.g., bromine fining (see par. [0067]).

33. The parties have extensively debated whether the skilled person would interpret claim 1 of the patent such that there would be an **interdependency** between the various features of the claim. According to the Claimant, the Patent does not disclose a specific interplay between the claimed composition and the fining process using tin. The Defendant disagrees stating that the Patent throughout the description in detail explains the specific interdependencies between the claimed features.
34. The Court notes at the outset, that the skilled person always interprets features in the light of the claim as a whole (see principles above). The skilled person, reading the claim, will thus see that the claim relates to a specific method (a downdraw process) for producing glass sheets and will understand that in order to fulfil this purpose of the claim, the various components must be selected in such a way that, after selecting, melting, and fining, they are suitable for use in a downdraw process which leads to a glass sheet being produced having the composition as specified in the claim (feature 1.1). In particular in relation to the fining step, the claim as a whole teaches the skilled person not to use arsenic or antimony, but to use tin as a fining agent instead (see above). Looking at the features of the claim, the skilled person immediately realises that particularly feature 1.2 is an element of the claim that inherently creates interdependencies between the various components of feature 1.1. In the ratio  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$ , an increase of one oxide without adjustment of the other oxides will increase the ratio. Likewise, the concentration Al<sub>2</sub>O<sub>3</sub> determines the ratio. The skilled person thus understands that the amounts of these oxides are interdependent.
35. Also from a technical functional point of view, the skilled person understands that the features of the claim are interdependent. For example, the description explains in par. [0044] that it has been found that the MgO concentration in the glass and the glass'  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio are critical to the glass' performance and, in particular, are critical with regard to meltability and fining. Paras. [0056] and [0057] add that prior to the present invention, it was believed that MgO concentrations equal to or greater than 1 mole percent raised liquidus temperatures (lowered liquidus viscosities), thereby compromising high viscosity forming processes, such as, downdraw processes, e.g., fusion processes. It has according to the description been found that higher levels of MgO can be used (without compromising the downdraw process), provided that simultaneously, the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio and SiO<sub>2</sub> concentration are carefully controlled. Thus, of the alkaline earth oxides, MgO is considered to be particularly important with regard to melting and fining. In addition, relative to the other alkaline earth oxides, the presence of MgO results in a lower density and CTE, and a higher chemical durability, strain point, and modulus. Finally, it follows from par. [0066]-[0067] of the description that tin fining is less effective than fining with As<sub>2</sub>O<sub>3</sub> or Sb<sub>2</sub>O<sub>3</sub>, but maintaining an  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio and MgO concentration in the claimed ranges compensates therefore because it makes the fining process easier to perform and more

effective. The skilled person thus understands from the claim in light of the description that the concentration of MgO, the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio, the  $\text{SiO}_2$  concentration and the use of tin as a fining agent are interdependent.

36. Based on the expert opinions submitted by both parties, the Court furthermore considers that it belonged to the common general knowledge of the skilled person that in glass systems like the ones produced by the claimed method, the individual components are interdependent and the effects of adding and leaving out certain components or changing the concentration of individual components are often non-linear. This is explained by the Defendant's expert Prof. Feller "the individual components have strong interdependencies and the effects of adding and leaving out certain components or changing the concentration of individual components cannot be accurately predicted and are often non-linear." (See opinion of Prof. Feller, Exhibit QE1, p. 2 under 1) and is confirmed by the Claimant's expert Prof. Roos in his opinion (Exhibit D32, p. 3 1<sup>st</sup> and 3<sup>rd</sup> par.) who states: "It is correct noting that there are a multitude of interactions that can occur when oxides are exchanged in glass compositions." And "As correctly noted, the mentioned interactions can, under certain circumstances, also lead to non-linear changes in properties. Non-linear relationships are the rule, not the exception."
37. Against this background, the skilled person, reading the claim as a whole in the context of the description, using its common general knowledge, would understand that the claim features are interdependent and, in combination, claim a downdraw process for the production of glass sheets for flat panel displays exhibiting desirable properties without the use of arsenic or antimony as a fining agent, instead using  $\text{SnO}_2$  as a fining agent.
38. **Claim 2** refers back to the method of claim 1 and specifies that the glass making up the sheets is **substantially free of BaO**. The term "substantially free of BaO" is defined in the description as a concentration of BaO less than or equal to 0.05 mole percent (par. [0026]).
39. **Claim 3** refers back to the method of Claim 1 or 2 and further specifies that the fining is performed in the presence of tin in an amount such that the finished glass comprises less than or equal to 0.15 mole percent  $\text{SnO}_2$ . The skilled person learns from the description that the presence of  $\text{SnO}_2$  in AMLCD glasses has not resulted in any known adverse effects in the use of these glasses for the manufacture of liquid crystal displays.  $\text{SnO}_2$ , however, can form crystalline defects in AMLCD glasses when used at high concentrations. Accordingly, the concentration of  $\text{SnO}_2$  in the finished glass is preferably less than or equal to 0.15 mole percent. The technical function of the upper limit for the  $\text{SnO}_2$  concentration in the finished glass is to avoid crystalline defects.

### III. Added matter

40. Under Article 138(1)(c) EPC a European patent may be revoked if its subject-matter extends beyond the content of the application as filed. In order to ascertain whether there is added matter contrary to Art. 123(2) EPC, the Court must thus first ascertain what the skilled person would derive directly and unambiguously using his common general knowledge and seen objectively and relative to the date of filing, from the whole of the application as filed, whereby implicitly disclosed subject-matter, i.e. matter that is a clear and unambiguous consequence of what is explicitly mentioned, shall also be considered as part of its content. The assessment of added matter cannot be restricted to only those parts of the original application which the patent proprietor indicated as a basis for an amended claim during the examination proceedings at the EPO, since a proper understanding of these parts also requires an assessment of their content in the context of the disclosure of the application as a whole (cf. UPC\_CoA\_382/2024, order of 14 February 2025, *Abbott/Sibio*).
41. The assessment of whether there is added matter is a question of law to be decided on the basis of the facts brought forward by the parties. The facts are the relevant claims and the application as filed. Since the test is whether the relevant claims have basis in the application *as a whole*, the Court is allowed to look at the entire document. The underlying rationale for this requirement is that the patentee cannot claim more than they actually contributed to the state of the art at the priority date. Therefore, an amendment that is made after the filing date should not provide the skilled person with additional technically relevant information which was not derivable from the original application. (UPC\_CoA\_528/2024, UPC\_CoA\_529/2024, order of 25 November 2025 *Amgen/Sanofi*).
42. Where, as here, the patent results from a divisional application, this requirement applies to each earlier application (Art. 76(1) EPC). The subject matter of the claims thus may not extend beyond the disclosure of (1) the application as filed for the patent and (2) the parent application (cf. UPC\_CoA\_464/2024 (and other numbers) decision of 25 November 2025, *Meril/Edwards*, UPC\_CoA\_764/2024; UPC\_CoA\_774/2024, decision of 2 October 2025, *Expert/Viosys*). Since in the present case, the Claimant has only relied on the application as filed (submitted as Exhibit D7, “the Application”) in support of its added matter argumentation and the parties agree that the contents of the Application and the parent application (submitted into these proceedings as Exhibit D2, “the Parent application”) are essentially identical, in the following, the Court will only refer to the Application, whereby the reasons and conclusions apply to the Parent application *mutatis mutandis*.

#### Claim 1

43. According to the Claimant, there is no basis for claim 1 as granted in the Application. Originally filed claim 5 does not provide such a basis as this was a product claim with further limiting features that were not included in the method claim. One of these limitations is the downdraw process which, according to the Claimant, has not been disclosed in combination with selecting, melting, and fining batch materials nor in combination with features 1.3 and

1.4. In addition, according to the Claimant, there is an intermediate generalisation because claim 9 as originally filed does not specify the specific ratio of the oxides as claimed in the granted claim 1, does not require the purposed absence of arsenic and antimony and is limited to an embodiment with a specific average gaseous inclusion level. Moreover, the combination of feature 1 and feature 1.3 is not clearly and unambiguously disclosed in the Application. There is, still according to the Claimant, also no disclosure in the Application, neither in the description nor the claims, for feature 1.4. In addition, the Application does not directly and unambiguously disclose the combination of purposely not using antimony and arsenic as claimed. Furthermore, the Claimant argues that an intermediate generalization has been performed, with respect to the amount of antimony and arsenic to be present and the type of antimony and arsenic to be present.

44. According to the Defendant, the specific combination of features claimed in claim 1 of the Patent can be directly and un-ambiguously derived from the Application by the skilled person when taking into account the entirety of the disclosure.

#### Features 1 and 1.1

45. In the opinion of the Court, the skilled person, reading the Application as a whole, will realise that the downdraw process (feature 1) is disclosed throughout the Application as the preferred method for producing the glass sheets of the invention. The background description (p. 2, line 27 - p. 3, line 4) already discloses that downdraw and in particular the fusion downdraw process is one of the few processes that are capable of delivering glass sheets which can be used as substrate (in the production of AMLCD devices) without costly finishing operations. However, downdraw requires a high liquidus viscosity. Against this background, the Application discloses as one of the objects of the invention (p. 5, line 20) to provide a glass composition having a liquidus viscosity of greater than or equal to 100,000 poises to allow manufacturing by for example the fusion process (which the skilled person knows is a downdraw process, Application p. 2, lines 30-31).
46. That downdraw is disclosed as the preferred method for making the glass sheets of the invention is also evidenced by other parts of the Application (e.g. p. 9, line 9 and p. 19, lines 6-8, where it is stated that “Preferably the glasses [of the invention, cf. line 6] are made using a downdraw process (underline CD)”, and p. 21, line 31 in relation to the glasses of Examples 1-43 that these can also be formed using downdraw techniques). Based on this information, the skilled person will understand that the downdraw process is disclosed generically as the preferred method for producing all the glasses of the invention and not (merely) in relation to particular glass composition or (process) features as claimed in claim 9 of the Application. Therefore, the downdraw method may be claimed in combination with the other features of the claim without creating added matter.
47. This is in particular also true for the steps of selecting, melting, and fining batch materials (feature 1.1). It is generally known by the skilled person that in order to produce glass sheets with a downdraw process, the batch materials necessarily have to be selected, melted and

fined before being formed into glass sheets by downdraw. It is self-evident to the skilled person that the specific composition defined by feature 1.2 can only be obtained by selecting the listed oxides within the claimed ranges. It is also self-evident to the skilled person based on common general knowledge that all conventional glass making processes require melting. Fining is disclosed in the Application as the “Field of the invention”, p. 2, lines 11-12, also see the title “FINING OF BOROALUMINO SILICATE GLASSES” and discussed in detail throughout the description; see also p. 10, lines 28-29, p. 11, lines 1-2, p. 16, line 4 and p. 17, lines 5-7 (with identical disclosures in paragraphs [0043], [0044], [0057] and [0061] of the granted patent) where melting and fining are disclosed in combination. There is thus no intermediate generalisation by claiming a downdraw process comprising the step of selecting, melting and fining batch materials.

48. In summary, features 1 and the method steps of feature 1.1 are disclosed in the Application as generic statements relating to a core aspect of the invention. It follows that the downdraw process (including the steps of selecting, melting, and fining batch materials) is disclosed in combination with all the glasses and process features in the Application, all being embodiments which can be produced using the claimed process. There is no forbidden generalisation by claiming the downdraw process in claim 1 as granted.

Features 1.2, 1.3 and 1.4

49. The specific list of oxides as well as their concentration ranges in an alkali-free glass as defined by feature 1.1 of the granted claim are explicitly disclosed in the Application in combination with the ratio  $\Sigma RO/Al_2O_3$  (feature 1.2 of the granted claim), see e.g. embodiment [9] on p. 30 of the Application:

9. An alkali-free glass comprising in mole percent on an oxide basis:

SiO <sub>2</sub> :	64.0-71.0
Al <sub>2</sub> O <sub>3</sub> :	9.0-12.0
B <sub>2</sub> O <sub>3</sub> :	7.0-12.0
MgO:	1.0-3.0
CaO:	6.0-11.5
SrO:	0-1.0
BaO:	0-0.1

wherein:

$$\Sigma[RO]/[Al_2O_3] \geq 1.00,$$

where  $[Al_2O_3]$  is the mole percent of Al<sub>2</sub>O<sub>3</sub> and  $\Sigma[RO]$  equals the sum of the mole percents of MgO, CaO, SrO, and BaO.

50. A disclosure of the oxide ranges as claimed in feature 1.1 of the claim as granted can also be found in the description of the Application. The claimed range for SiO<sub>2</sub> is disclosed on p. 8, lines 2-3 and p. 9, lines 12-13. The claimed range for Al<sub>2</sub>O<sub>3</sub> is disclosed on p. 9, lines 23-28. The claimed range for B<sub>2</sub>O<sub>3</sub> is disclosed on p. 9, lines 30-32 and p. 10, lines 13-14. The claimed range for MgO is disclosed on p. 16, lines 7-12. The claimed range for CaO is disclosed at p. 16, lines 20-23. The claimed ranges for SrO and BaO are disclosed on p. 16, line 30 - p. 17,

line 1. All the claimed ranges thus correspond with the broadest definition of these ranges in the description of the Application.

51. The skilled person regards the disclosed ranges as generally relating to the composition of the glasses of the invention and not as relating to any particular (separate) embodiment. Their combination is directly and unambiguously derivable from the Application as a whole. Likewise, the requirement  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3] \geq 1.0$  is disclosed as a generic characteristic of all glasses disclosed in the Application and its importance is highlighted throughout the description as part of the core technical teaching of the invention (see e.g. p. 12, lines 22-23).
52. In addition, the combination of features 1.2-1.4 is disclosed in the "Summary of the Invention" of the Application as the "second aspect of the invention", starting on p. 6, line 20 to p. 7, line 6, with the proviso that, as pointed out by the Claimant, there are three differences between these passages and granted claim 1: there is no literal disclosure that (i) "neither As nor Sb" are (ii) "purposely used" and that (iii) at least 0.01% of Sn is used in the fining step.
53. In relation to the first point, the Claimant argues that the Application (p. 18) does not describe fining without arsenic nor antimony, which is indeed required by feature 1.3 ("using neither arsenic nor antimony").
54. The Court finds that whilst it is correct that the non-use of arsenic and antimony, respectively, are discussed in separate, consecutive paragraphs of the Application (the first and second par. on p. 18, respectively), the skilled person will not read these paragraphs in isolation, but will rather consider the Application as a whole. Doing so, the skilled person is taught on p. 5, line 27 that the object of the invention is to obtain a low gaseous inclusion level of the glass "without the use of arsenic and/or antimony as fining agents". In relation to the second aspect of the invention, the Application on p. 7, line 4 indicates it as preferred that both a) and b) are characteristics (i.e. at most 0.05 mole percent of both  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$ ). On p. 17, lines 24-27, the Application discloses that an  $[\text{RO}]/[\text{Al}_2\text{O}_3] \geq 1.0$  improves fining which allowing for the use of more environmentally friendly fining packages. P. 18, lines 1-5 of the Application then describes that even though  $\text{As}_2\text{O}_3$  is the most effective fining agent, it is poisonous and that therefore, most preferably, no  $\text{As}_2\text{O}_3$  is purposely used in the fining of the glass (p. 18, line 8). In a similar vein (although not as toxic as  $\text{As}_2\text{O}_3$ ) no  $\text{Sb}_2\text{O}_3$  is purposely used (p. 18, line 16). The Application then goes on to explain that tin fining can be used even though it is less effective compared to " $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$ " (p. 18, l. 20, underline CD). In addition, and consistent with this general teaching, all of the Examples listed in Table 1 of the Application contain neither arsenic nor antimony, but are prepared with  $\text{SnO}_2$  as the fining agent. From these teachings, the skilled person will deduce that preferably neither arsenic nor antimony should be used for the fining and that  $\text{SnO}_2$  should be used for the fining instead.

55. From these disclosures, it also follows that also the Claimant's second point does not lead to an extension of subject matter. P. 18 of the Application provides a clear teaching that in view of the drawbacks of both agents, as mentioned above, preferably the fining should be performed without the use of substantial amounts of  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$  (in which case the finished glass has at most 0.05% of those components, cf. p. 18, lines 6 and 15, respectively). Most preferably, however, no  $\text{As}_2\text{O}_3$  and no  $\text{Sb}_2\text{O}_3$  are "purposely used" (p. 18, lines 8 and 16, respectively). In such cases, the Application discloses that the finished glass will typically have at most 0.005 mole percent of either component, as a result of contaminants.
56. The Claimant's intermediate generalisation argument, that is based on par. [0063] of the granted patent, is based on a wrong claim construction of the granted claim. As follows from the claim construction above, the claims of the patent as granted will not be interpreted by the skilled person as (also) covering the production of finished glasses without substantial amounts of  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$ , in the sense that they may contain up to 0.05 mole percent of  $\text{As}_2\text{O}_3$  and/or  $\text{Sb}_2\text{O}_3$ , but are rather interpreted as covering (only) the purposive non-use of arsenic and antimony, i.e. the finished glass will typically have at most 0.005 mole percent of  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$  which is present as a result of contamination of the batch materials and/or the equipment used to melt the batch materials (disclosed on p. 18, lines 9-10 and 18-19 of the Application, respectively).
57. As the Application is generally concerned with manufacturing glasses without the use of "arsenic and/or antimony" as fining agents (disclosed on e.g. p. 5, line 27), the Court also sees no added matter in claiming the non-purposive use of arsenic and antimony (as opposed to their species,  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$ , as argued by the Claimant).

#### Feature 1.4

58. The Application does not contain the exact wording of feature 1.4, i.e. "the fining is performed in the presence of tin in an amount such that the finished glass comprises at least 0.01 mole percent  $\text{SnO}_2$ ". However, literal support is not required to comply with Art. 138(1)(c) EPC. It is sufficient if the skilled person, directly and unambiguously using his common general knowledge, can derive the subject matter of the claim from the application as a whole (see principles above). Applying this standard, the Court notes that tin fining as such is disclosed explicitly on p. 18, line 20: "Compared to  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$  fining, tin fining (i.e.,  $\text{SnO}_2$  fining) is less effective, but  $\text{SnO}_2$  is a ubiquitous material which has no known hazardous properties" and "Tin fining can be used alone or in combination with other fining techniques". Tin fining is thus clearly disclosed as an alternative for arsenic and antimony which are both poisonous and require special handling (see above, p. 18 of the Application). For the skilled person, this technical teaching aligns with and is supported by the disclosure on p. 17, l. 24 et seq. where it is said that the invention improves fining allowing for the use of more environmentally friendly fining packages, immediately followed by examples of glasses of the invention having maximum amounts for  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$  and a minimum amount for  $\text{SnO}_2$  of 0.01 mole percent. The skilled person will understand from the application as a whole that when tin is used as a fining agent, the glasses of the invention

comprise at least 0.01 mole percent SnO<sub>2</sub>. Also, in alignment with this teaching, as already mentioned above, all of the Examples in Table 1 are prepared with Sn as a fining agent as evidenced by the presence of 0.07 mole percent SnO<sub>2</sub> in the final glass compositions. Therefore, a minimum amount for SnO<sub>2</sub> of 0.01 mole percent is disclosed generally in the Application in combination with tin fining.

59. Finally, the Court notes that even if a minimum amount of 0.01 mole% Sn would not be explicitly linked in the Application to the fining step, as argued by the Claimant, this does not create added matter as feature 1.4 does not claim that at least 0.01 mole% SnO<sub>2</sub> is used in the fining step. Feature 1.4 requires that SnO<sub>2</sub> is used in the fining step “in an amount such that the finished glass comprises at least 0.01% SnO<sub>2</sub>”. This technical information finds support in the Application as a whole, in particular on p. 17, ln.28-33 where the minimum amount of 0.01% Sn is indeed expressed in relation to the (finished) glass that is provided by the invention. A similar disclosure can be found on p. 7, lines 2-6 and p. 31, embodiments [13]-[17].
60. To conclude, all of the features of claim 1 of the Patent, in the claimed combination, find basis in the Application. There is no added matter.

#### Claim 2

61. No separate reasons for added matter concerning claim 2 as granted have been brought forward by the Claimant so that this claim does not require further discussion.

#### 62. Claim 3

63. In relation to claim 3, the Claimant has argued that this claim contains a new range, essentially “fining in the presence of tin in an amount such that the finished glass comprises at least 0.01 but less than or equal to at least 0.15 mole percent SnO<sub>2</sub>”, which range is not derivable from the Application.
64. The Court finds that also claim 3 has support in the Application. The preferred upper limit of 0.15 mole percent SnO<sub>2</sub> is disclosed on p. 18 generally in connection with tin fining. The Application explains that SnO<sub>2</sub> can form crystalline defects in AMLCD glasses when used at high concentrations. Accordingly, the concentration of SnO<sub>2</sub> in the finished glass is preferably less than or equal to 0.15 mole percent. This technical teaching is generally applicable to the glasses of the invention and therefore may be claimed in combination with the lower limit of 0.01 and the other features of claim 3.
65. To conclude, there is no added matter in claim 3.

#### IV. Sufficiency of disclosure

66. The Claimant argues that that the patent must be revoked pursuant to Art. 138(1)(b) EPC because it does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.
67. The principles governing the assessment of sufficiency of disclosure have been set out by the Court of Appeal in UPC\_CoA\_528/2024, UPC\_CoA\_529/2024, order of 25 November 2025 *Amgen/Sanofi*.
68. Sufficiency has to be examined on the basis of the patent as a whole, thus on the basis of the claims, description and drawings, from the perspective of the skilled person with his common general knowledge at the filing or priority date.
69. The test to be applied is whether the skilled person is able to reproduce the claimed subject matter on the basis of the patent without any inventive effort and without undue burden. An invention is sufficiently disclosed if the patent specification shows the skilled person at least one way – and in case of functional features: one technical concept – of performing the claimed invention.
70. Where a claim contains one or more functional features, it is not required that the disclosure includes specific instructions as to how each and every conceivable embodiment within the functional definition(s) should be obtained. A fair protection requires that variants of specifically disclosed embodiments that are equally suitable to achieve the same effect, which could not have been envisaged without the invention, should also be protected by the claim. Consequently, any non-availability of some embodiments of a functionally defined claim is immaterial to sufficiency, as long as the skilled person through the disclosure is able to obtain suitable embodiments within the scope of the claim.
71. The burden of presentation and proof lies with the Claimant as the party invoking invalidity of the patent.
72. Applying these principles to the case at hand, the Court concludes that the claimed invention is sufficiently disclosed.
73. According to the Claimant, the invention is not sufficiently disclosed over the whole range claimed as the invention requires a specific range in the viscosity to be performed. However, no feature regarding the required viscosity of the melted batch material is present in the granted claims. Consequently, also methods fall within the scope of the claim that have insufficient viscosity and are therefore not realizable. Therefore, the person skilled in the art cannot apply the claimed invention without undue burden since it requires testing of different possible combination of batch materials in the claimed range of mole percentage to arrive at the appropriate viscosity. This is not merely a theoretical consideration according to the Claimant; the patent in suit itself confirms it. In particular, examples 44 and 45 fall

within the claimed range but have liquidus viscosities of only 5200 Pa s (52,000 poises) and 5900 Pa s (59,000 poises). As a result, the patent in suit does not allow the claimed invention to be performed in the whole range claimed (no “whole range sufficiency”). Moreover, still according to the Claimant, the description is devoid of any clear guidelines on how to select specific ranges for the components influencing the [RO]/[Al<sub>2</sub>O<sub>3</sub>] ratio such as CaO, MgO, SrO, BaO and Al<sub>2</sub>O<sub>3</sub>. Each of these concentrations may affect the liquidus temperature and viscosity, making it difficult for the skilled person to determine the appropriate amendments without undue burden making the technical solution unimplementable. Finally, the claim is not limited to the oxides specified in claim 1 due to the “comprising” language. However, the Patent does not provide any guidance how the oxide ranges in sheets with other oxides present still falling under the claims as granted should be selected so that the viscosities for the claimed downdraw process are still obtained.

74. According to the Defendant, the Claimant applies the wrong legal standard. The patent is sufficiently disclosed because the specification contains sufficient information on the relevant criteria for selecting suitable alternatives from the claimed scope with reasonable effort. The Defendant furthermore states that the skilled person in view of the 43 working examples disclosed in the Patent has a large number of specific working embodiments which disclose compositions that fall under the claimed ranges that the skilled person can choose from and they are further taught how to adjust the concentration of certain components to achieve certain properties and effects.
75. The Court, first of all, points out that the claimed subject matter, upon a proper construction is limited to a downdraw process for the production of glass sheets (see claim construction above). The skilled person knows from the Patent and on the basis of their common general knowledge that a minimum liquidus viscosity is required for performing a downdraw process. The skilled person knows that if the viscosity is too low, the downdraw method will not work as the glass will not be able to withstand the mechanical strains of the downdraw process. The Patent teaches the skilled person that in order to be suitable for downdraw, the liquidus viscosity of the glass composition is preferably higher than 100,000 poises. This corresponds to the common general knowledge of the skilled person. As follows from the discussion under claim construction above, the claim does not cover any methods using compositions having an insufficient viscosity for downdraw. Such compositions are not part of the claimed subject matter because the claimed method requires the compositions to be suitable for downdraw. Consequently, the premiss that underlies the Claimant’s sufficiency case, i.e. that (irreproducible) methods using glasses having an insufficient viscosity fall under the claim is wrong.
76. As follows from the above principles, the test to be applied is whether the skilled person is able to reproduce the claimed subject matter on the basis of the Patent without any inventive effort and without undue burden. In the opinion of the Court, that is the case for the present Patent.

77. It is not in dispute between the parties that the skilled person knows what a downdraw process is and knows how to carry out such a process in general including the claimed steps of selecting, melting, and fining batch materials so that the glass making up the sheets comprises the claimed components in the indicated mole percent ranges (and ratio). As mentioned above, the Patent gives the skilled person guidance about the viscosity that is typically required for downdraw which corresponds to the general knowledge. Furthermore, it is undisputed that measuring the liquidus viscosity of a glass composition was a standard procedure at the priority date.
78. Against this background, the Patent discloses numerous compositions in Examples 1-43 which all have the required liquidus viscosity and can all be formed with downdraw, as explicitly confirmed in par. [0076]. It is also stated there that Examples 1-43 have densities, CTE's, strain points, and Young's modulus values that make the glasses suitable for use in display applications, such as AMLCD applications. The glasses also have a chemical durability suitable for these applications. The Claimant has not argued that this information provided in the Patent is somehow wrong or not reproducible.
79. The Claimant refers to Examples 44 and 45 of the Patent as demonstrating that the claimed method is not working in some embodiments. However, leaving aside that these compositions fall outside the scope of the claimed subject matter as they are not suitable for downdraw (see above), these Examples do not cast doubt on the sufficient disclosure of the claimed invention. First of all, the Patent itself explicitly recognizes that Examples 44 and 45 do not exhibit the viscosity required for downdraw (par. [0078]) which confirms to the skilled person that these compositions are considered to be outside the scope of protection. The Patent also explains why Examples 44 and 45 are not examples of glass compositions that are suitable for downdraw. In relation to Example 44, it is explained that it was found to produce mullite upon crystallization, which is an undesirable liquidus phase for downdraw processes and describes how this can be avoided by making small changes to the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio. Regarding Example 45, the description explains that it has a MgO concentration close to the upper limit of 3.0 mole percent, illustrating the effect that liquidus temperatures initially go down but then increase. As pointed out by the Defendant, other examples (36 and 37) demonstrate that compositions with higher MgO concentrations do work, albeit with a higher  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio.
80. Contrary to what the Claimant argued in the oral hearing, this does not amount to an admission that the claim is not enabled across its entire scope, but rather provides the skilled person with further guidance on how to reproduce the claimed subject matter. The same applies to Examples 1 and 2, these are (undisputed) working examples, even accepting the Claimant's submission at the oral hearing that these come "close" to Examples 44 and 45. In this regard, additional guidance about the impact of the various oxides on the liquidus viscosity is also given in other sections of the description, see e.g. [0056], [0058], [0060] (last sentence). It is also clear from the description in paras. [0078]-[0080] and [0070] with reference to Table 1, that all Examples 44-52 should be considered as comparative examples rather than "non-working" embodiments, as suggested by the Claimant. Also, for the other

comparative examples, the description of the Patent explains why these glass compositions do not work (because they have a  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio less than 1.00 which leads to either a low liquidus viscosity (Example 46) or high melting temperatures (Examples 47 and 48). Examples 48-52 have MgO concentrations less than 1.0 mole percent and thus have high or marginal melting temperatures (Examples 48-50) or high CTE's (Examples 51 and 52), see par. [0080].

81. In the opinion of the Court, put against the test for insufficiency, the Patent in its general description, further supported by working examples 1-43, and the information provided in the context of those examples provides the skilled person with sufficient information to perform the invention across the claimed scope. Experimental report D33 (and declaration D40), submitted by the Claimant to demonstrate that certain compositions, which allegedly reflect the prior art and are covered by feature 1.2, do not provide the viscosity that is required for drawdown, does not change the Court's conclusions. Leaving aside the fundamental criticisms expressed by the Defendant on the method used in these reports to prepare the tested compositions and disputing that these compositions are relevant at all because they are not alkali-free, the preparation of these examples is not part of the claimed subject matter, which renders them irrelevant for the question of reproducibility of the claimed subject matter. It would have been up to the Claimant to argue and where necessary prove that it would have been an undue burden for the skilled person to obtain suitable embodiments falling within the scope of the claim.
82. To the extent that the claim limitation to a "drawdown process" is to be regarded as a functional feature, it follows from the above that the skilled person through the disclosure of the Patent's description is able to obtain suitable embodiments within the scope of the claim, or at least that the Claimant has not been able to cast sufficient doubt on this. As follows from the principles above, it is not required that the disclosure includes specific instructions as to how each and every conceivable embodiment within the functional definition should be obtained. The reference made by the Claimant to the experts of the Defendant who have stated (in the context of claim interpretation and inventive step) that changes to glass compositions often lead to unpredictable results (also discussed above under claim construction) does not alter the Court's conclusion on sufficiency. The disclosure of the Patent, i.e. the technical information provided in the description, make the subject matter which is claimed (sufficiently) reproducible. That at the priority date, but without the knowledge of the Patent, the behaviour of similar glass compositions was generally deemed to be unpredictable by the skilled person does not change this conclusion. The Claimant has not shown that carrying out the claimed method using the information provided by the Patent requires anything more than a reasonable amount of trial and error which does not prevent the invention from being enabled.
83. Finally, the argument that the claimed method covers glass compositions containing other oxide components without sufficient guidance on how to use these does not convince the Court that the invention is insufficiently disclosed. The Patent in par. [0061] provides examples of various other oxides that can be included to adjust various attributes of the

glasses and provides guidance as to the amounts of each of the oxides and their total combined concentration. In the absence of a concrete indication to the contrary, let alone evidence, which would have been for the Claimant to bring forward, this does not lead to a finding that the claimed subject matter is insufficiently disclosed. The skilled person, on the basis of the disclosure of the Patent as a whole, is provided with sufficient information to reproduce the claimed subject matter.

84. In conclusion, the Claimant has not shown that the invention claimed in the claims of the Patent is insufficiently disclosed.

#### V. Novelty

85. For the purposes of Article 54 EPC, an invention shall be considered to be new if it does not form part of the state of the art. The state of the art, in accordance with Article 54(2) EPC shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application (or when applicable the priority date). Additionally, the content of European patent applications as filed, the dates of filing of which are prior to the date referred to in paragraph 2 and which were published on or after that date, shall be considered as comprised in the state of the art (Art. 54(3) EPC). The same standard for novelty applies to prior art under Art. 54(3) EPC.
86. The assessment of novelty within the meaning of Art. 54 (1) EPC requires the determination of the whole content of the prior publication. It is decisive whether the subject-matter of the claim with all its features is directly and unambiguously disclosed in the prior art citation (see UPC CoA, Order of 25 September 2024, UPC\_CoA\_182/2024, App 21143/2024, *Mammut/Ortovox*).
87. Applying the above standard to the case at hand, the Court comes to the conclusion that the subject matter of claim 1 of the Patent as granted is novel.

#### Novelty over D9 (WO 2006/115997 A2)

88. The parties agree that document D9 is prior art under Art. 54(3) EPC.
89. D9 is directed to a process for forming glass used for glass substrates for flat panel display devices (cf. para [0001] of D9). The glasses of D9 are essentially free of arsenic (paras. [0001], [0006], [0018] and [0021] of D9) and antimony (par. [0021] of D9). D9 further discloses that SnO<sub>2</sub> may be added as a fining agent ([0027]) and that the glasses may be formed by a downdraw process (paras. [0005] and [0022] of D9).
90. In par. [0031], D9 discloses a glass composition having the following components (table and calculations provided by the Claimant, not as such disputed by the Defendant):

Oxide	wt. %	mol %	claim 1 of the patent in suit in mol %
SiO <sub>2</sub>	62	67.57	64.0-71.0
Al <sub>2</sub> O <sub>3</sub>	16.5	10.60	9.0-12.0
B <sub>2</sub> O <sub>3</sub>	10.5	9.87	7.0-12.0
MgO:	1.3	2.11	1.0-3.0
CaO:	7.5	8.76	6.0-11.5
SrO:	0.78	0.49	0-1.0
BaO	0.014	0.01	0-0.1
SnO <sub>2</sub>	1.25	0.54	at least 0.01
Br	0.01	0.01	not excluded
ZnO <sub>2</sub>	0.08	0.04	not excluded

91. According to the Claimant, herewith all the features of claim 1 are disclosed directly and unambiguously in D9. According to the Defendant, the composition disclosed in paragraph [0031] of D9 is clearly unsuitable for producing glass sheets by a downdraw process as claimed in feature 1. The Claimant replied stating that since D9 is a patent application from the Defendant itself it is not credible that the composition would not be suitable for downdraw. If it was, they could have substantiated this assertion with experimental data.
92. The Court finds that although the glass composition disclosed in par. [0031] of D9 falls under the glass composition as claimed in feature 1.1 of claim 1 of the Patent, in the sense that its components fall within the claimed ranges (see the comparison table above), D9 fails to disclose in a direct and unambiguous way the method claimed in claim 1, i.e. a method for producing alkali-free glass sheets by a downdraw process (feature 1).
93. The composition disclosed in par. [0031] is not used in D9 for making glass sheets using a downdraw process nor is it disclosed as intended to be used in a downdraw process. Instead, it follows from the disclosure of D9 that the composition is used in an experiment to assess blister generation relative to the level of retained bromine (also see Fig. 1), wherein the glass is kept in a fibre tube at elevated temperature in order to measure the amount of released oxygen relative to the amount of retained bromine. Although the general description of D9 indeed discloses the downdraw process as the preferred method for making glass sheets (see above, par. [0022]), the glass composition in the example of par. [0031] is explicitly described in the context of an experiment wherein no glass sheets are produced. Already for these reasons, there is no direct and unambiguous disclosure of feature 1.
94. Moreover, the skilled person would derive from D9 itself that the glass composition disclosed in par. [0031] is not suitable for a downdraw method: it contains 1.25 wt.% of SnO<sub>2</sub>

(corresponding to 0.54 mole%) while it is disclosed in par. [0028] of D9 that the maximum amount for the fusion draw process is 0.2 wt.% (higher amounts may result in the formation of crystalline tin). In addition, experimental report D33, relied upon by the Claimant, leaving aside the criticisms made by the Defendant, shows that the viscosity of the glass composition of the example is below 100,000 poises. It would have been up to the Claimant, with whom the burden of presentation and proof lies as the party invoking invalidity of the patent, to substantiate and if necessary prove that the composition of the example disclosed in par. [0031] of D9 is, despite its lower viscosity and high content of SnO<sub>2</sub>, an example of a glass composition which is suitable for the production of glass sheets by a downdraw process as required by claim 1 of the Patent. Absent this substantiation, the Court concludes that it has not been established that the example is suitable for downdraw.

95. Contrary to the Claimant's assertion in par. 93 of the Reply to the Defence to Revocation, the Court does not see how this conclusion leads to serious concerns regarding sufficiency of disclosure of the Patent (the Court understands the Claimant: as claim 1 of the Patent does not contain an upper limit for SnO<sub>2</sub>). As discussed under sufficiency of disclosure above, the claimed subject matter is limited to a downdraw process and based on the information in the Patent the skilled person is well able to reproduce the claimed subject matter on the basis of the patent without any inventive effort and without undue burden.
96. Against this background, the Claimant's argument that the "testing of an embodiment in D9 which does not fall under the preferred composition ranges would not make any sense" and whether or not the skilled person would "recognize the composition in par. [0031] as a realistic variant" is not relevant for the assessment of novelty. For novelty, all that matters is whether there is a direct and unambiguous disclosure of all features of the claim and this is lacking in D9. Given this outcome, there is no need for the Court to assess if (also) feature 1.3 lacks disclosure in D9 as argued by the Defendant.
97. The Court also has no doubts concerning the novelty of claims 2 and 3 of the Patent over D9, because these claims only add features over the (already novel) claim 1.

#### Novelty over D11 (WO 02/098810 A1)

98. The parties agree that D11, which belongs to the prior art under Art. 54(2) EPC, discloses a process for the low vacuum refining of alkali-free aluminoborosilicate glass melts (p. 1, first par. of D11a, the (undisputed) machine translation of D11). These glass melts may be used in conjunction with a flat glass forming process such as a downdraw process (see claim 15).
99. According to claim 1 of D11, a glass is formed in the refining process using a glass melt having specific oxide materials, therewith disclosing the selecting, melting, and refining batch materials of feature 1.1. D11 further discloses (p. 2, 5<sup>th</sup> par. D11a) that it is an object the invention in D11 to produce bubble-free and/or very well degassed melts of alkali-free aluminoborosilicate glasses without the use of toxic and environmentally harmful refining agents such as As<sub>2</sub>O<sub>3</sub> or Sb<sub>2</sub>O<sub>3</sub> or without the use of refining agents at all. On the top of p. 4,

D11a, it is stated that apart from  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$ , all non-toxic compounds suitable for refining can be used alone or in combination, such as  $\text{SnO}_2$ ,  $\text{CeO}_2$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{TiO}_2$ , sulfate, chloride, fluoride, etc. The use of  $\text{SnO}_2$  as the only fining agent is disclosed in the examples (feature 1.3).

100. Accordingly, claim 1 of D11 discloses a method for production of glasses having the following components (in mass%):

$\text{SiO}_2$	55...66
$\text{B}_2\text{O}_3$	1...11,5
$\text{Al}_2\text{O}_3$	12...25
$\text{MgO}$	0 ... 8
$\text{CaO}$	0 ... 10
$\text{SrO}$	0 ... 9
$\text{BaO}$	0 ... 8
$\Sigma\text{RO}$	7 ... 19
$\text{ZnO}$	0 ... 2
$\text{TiO}_2$	0 ... 2
$\text{ZrO}_2$	0 ... 2
$\text{SnO}_2$	0 ... 2
$\text{CeO}_2$	0 ... 2

101. The parties have debated whether the disclosure in D11, particularly of the glass compositions covered by claim 1 of D11, is novelty destroying for the method claim in claim 1 of the Patent, in particular features 1.1 and 1.2.
102. In this context, the parties have discussed case law from national courts and the EPO Boards of Appeal relating to the novelty of numerical ranges. Specifically, the Claimant referred to the case law of the German *Bundesgerichtshof* in which according to the Claimant it has been stated that, with regard to the field of chemistry, limit values of a quantity range of components include all possible intermediate values within the stated limits and that the entire range is disclosed as belonging to the claimed invention. However, in this case, in the opinion of the Court, the question of the disclosure content of a numerical range *per se* is not decisive. As a common denominator in the UPC's jurisprudence (see principles above) as well as in the case law from the EPO Boards of Appeal as well as in the national courts of the UPC member states, in order to take away the novelty of a claimed subject matter, there needs to be a direct and unambiguous disclosure in the prior art which meets all of the claimed features (in the claimed combination). Applying this standard, as a general rule, a generic disclosure does not take away the novelty of a specific (combination of) feature(s).
103. Regardless of whether the Claimant's or the Defendant's calculations of the weight% converted to mole percent (provided in the Reply and Rejoinder, respectively) are correct, it is in any event clear that (Claim 1) of D11 discloses glass compositions defined by broad ranges for the amounts of each oxide, which overlap partially with or embrace completely the ranges of features 1.1 of the Patent. However, as follows from the above principles, contrary to the arguments of the Claimant, the decisive question for novelty is not whether

the claimed compositions (in mole percent) are completely *encompassed in* the (broadly defined) compositions of D11. As mentioned above, for a prior art document to be novelty destroying, there needs to be a direct and unambiguous disclosure of subject matter falling within the claim (in this case a downdraw method producing a glass sheet whereby the glass making up the sheets has a composition as defined by features 1.1 which fulfils the ratio required by feature 1.2).

104. A glass composition that meets the requirements of features 1.1 and 1.2 can on the basis of D11 only be “created” by selecting specific values from the ranges in claim 1 of D11 for each of the components of the claimed composition so that the resulting combination complies with the ranges of features 1.1 in the ratio of feature 1.2. In particular, the Court notes that three components which the Patent considers to be essential for the invention, MgO, CaO and SnO<sub>2</sub>, are mere optional components of the compositions disclosed in D11. Especially SnO<sub>2</sub> and MgO are essential elements of the claims of the Patent. See par. [0057] of the Patent for MgO, whereby its claimed concentration range (1-3 mole percent) is narrow because it must be strictly controlled (par. [0058] of the Patent) in contrast with D11 where the Mg content may vary widely between 0 (i.e. not included at all) and 13.82 mole percent. As the skilled person has to make a considerable number of choices from multiple broadly defined ranges in document D11 to arrive at the claimed subject matter (without any teaching or disclosure in D11 to justify those selections) there is no direct and unambiguous disclosure of the claimed subject matter in D11. For the same reasons, the compositions presented in document D12 which have been devised by the Claimant based on a number of selections, again without any justification in the prior art document D11 itself, cannot support a lack of novelty. In conclusion, there is no direct and unambiguous disclosure in D11 of the claimed subject matter.
105. The results of experimental report D33, in which the Claimant tested a “composition calculated to fall under the scope of WO 02/098810 A1” (i.e. D11) do not change this conclusion. Leaving aside that the Claimant tested a composition that is not as such disclosed in D11, but was created by the Claimant and cannot be novelty destroying for that reason alone (for the reasons given above), the Defendant has argued in a substantiated way, by reference to the viscosity measured for that composition (84170.50 poise, Table D33, second column), that the composition is not suitable for a downdraw process. As the burden of proof lies with the Claimant, as the party invoking invalidity of the patent, it would have been up to the Claimant to provide evidence that the composition is indeed suitable for a downdraw process.
106. In summary, D11 does not disclose the subject matter of claim 1 directly and unambiguously and is therefore not detrimental to the novelty of claim 1. As claims 2 and 3 only add features over the (already novel) claim 1 they are novel as well, already for this reason.

## VI. Inventive step

107. The Claimant has argued that the claimed subject matter lacks inventive step over D19 as starting point (including Example 27 of D19), document D20 as starting point, example 15 or example 10, and over D27 as starting point.

### *Principles*

108. The approach to assessment of inventive step taken by the UPC has been provided by the Court of Appeal in its decisions dated 25 November 2025 in *Amgen/Sanofi* and *Meril/Edwards*, both already cited above.

109. A European patent is only validly granted for an invention if – apart from other requirements – it involves an inventive step. An invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art (Art. 56 EPC).

110. In the UPC approach, it first has to be established what the object of the invention is, i.e. the objective problem. This must be assessed from the perspective of the skilled person, with their common general knowledge, as at the application or priority date (also referred to as the relevant date) of the patent. This must be done by establishing what the invention adds to the state of the art, not by looking at the individual features of the claim, but by comparing the claim as a whole in context of the description and the drawings, thus also considering the inventive concept underlying the invention (the technical teaching), which must be based on the technical effect(s) that the skilled person on the basis of the application understands is (are) achieved with the claimed invention.

111. In order to avoid hindsight, the objective problem should not contain pointers to the claimed solution.

112. The claimed solution is obvious when at the relevant date the skilled person, starting from a realistic starting point in the state of the art in the relevant field of technology, wishing to solve the objective problem, would (and not only: could) have arrived at the claimed solution.

113. The relevant field of technology is the field relevant to the objective problem to be solved as well as any field in which the same or similar problem arises and of which the person skilled in the art of the specific field must be expected to be aware.

114. A starting point is realistic if the teaching thereof would have been of interest to a skilled person who, at the relevant date, wishes to solve the objective problem. This may for instance be the case if the relevant piece of prior art already discloses several features similar to those relevant to the invention as claimed and/or addresses the same or a similar

underlying problem as that of the claimed invention. There can be more than one realistic starting point and the claimed invention must be inventive starting from each of them.

115. The skilled person has no inventive skills and no imagination and requires a pointer or motivation that, starting from a realistic starting point, directs it to implement a next step in the direction of the claimed invention. As a general rule, a claimed solution must be considered not inventive/obvious when the skilled person would take the next step prompted by the pointer or as a matter of routine, and arrive at the claimed invention.
116. A claimed solution is obvious if the skilled person would have taken the next step in expectation of finding an envisaged solution of his technical problem. This is generally the case when results of the next step were clearly predictable, or where there was a reasonable expectation of success.
117. The burden of proof that the results were clearly predictable or the skilled person would have reasonably expected success, i.e. that the solution he envisages by taking the next step would solve the objective problem, lies on the party asserting invalidity of the patent.
118. A reasonable expectation of success implies the ability of the skilled person to predict rationally, on the basis of scientific appraisal of the known facts before a research project was started, the successful conclusion of that project within acceptable time limits.
119. Whether there is a reasonable expectation of success depends on the circumstances of the case. The more unexplored a technical field of research, the more difficult it was to make predictions about its successful conclusion and the lower the expectation of success. Envisaged practical or technical difficulties as well as costs involved in testing whether the desired result will be obtained when taking a next step may also withhold the skilled person from taking that step. On the other hand, the stronger a pointer towards the claimed solution, the lower the threshold for a reasonable expectation of success.

*i) The objective problem of the invention*

120. The parties have defined the object, or objective problem, of the invention differently. According to the Claimant, as formulated at the hearing, the objective problem is the provision of a method for producing an alternative alkali-free, more environmentally friendly glass exhibiting the properties for use in display devices. According to the Defendant, the objective problem is to provide a method for manufacturing glass sheets that have excellent properties which render them suitable for use in LCDs without a need for costly and cumbersome finishing operations and the use of fining agents that potentially create environmental and health issues.
121. In the view of the Court, the technical effect(s) that the skilled person on the basis of the application understands is (are) achieved with the claimed invention are that the claimed method provides a method for making glass sheets for flat panel displays which does not

involve costly post forming finishing operations such as lapping and polishing (p. 3, lines 1-4), said glass sheets exhibiting both thermal stability and chemical durability (p. 3, lines 20-21), having a low density (p. 4, lines 15-20, p. 5, lines 17-18) and a low gaseous inclusion level when commercially manufactured (p. 4, lines 21-24) without the need to use fining agents that create environmental and health issues. The skilled person will further understand that these effects are achieved by the examples provided in the Application (Examples 1-43), which demonstrate that the glasses produced by the downdraw method of the invention without the use of arsenic or antimony as fining agents have densities, CTE's, strain points, and Young's modulus values that make them suitable for use in display applications.

122. Based on the above effects, the objective problem underlying the invention is to provide a more environmentally friendly method for making alkali-free glass sheets, which does not involve costly post forming finishing operations, that produces glass sheets exhibiting properties that make them suitable for use in (AMLCD) display applications when commercially manufactured.
123. The inventive concept underlying the invention as a solution to the objective problem, as understood by the skilled person, is the combination of features as claimed, i.e. a downdraw process using a specifically defined and interdependent glass composition (features 1.1 and 1.2, also see claim construction above) which allows the fining to take place in the presence of SnO<sub>2</sub> instead of arsenic and antimony whilst providing the characteristics which makes the produced glass sheets suitable for the use in display applications.

*ii) (non-)obviousness starting from the prior art*

124. The Court will now assess for each of the prior art references relied on by the Claimant, whether the claimed solution was obvious for the skilled person at the priority date and concludes that this is not the case.

D19 (US 2002/0082158A1)

125. It is not in dispute that D19 is part of the state of the art. As argued by the Claimant, D19, like the Patent relates to alkali-free, aluminosilicate glasses exhibiting desirable physical and chemical properties for substrates in flat panel display devices suitable to be prepared via a downdraw process (cf. paras. [0001], [0007] and [0021] of D19). The glass compositions are prepared by selecting and melting of oxides and include a fining step (cf. paras. [0029] and [0032] of D19). The Court agrees with the Claimant that D19 is a realistic starting point as it would be of interest to the skilled person working in the relevant field wishing to solve the objective technical problem underlying the invention.
126. D19 does not disclose that the fining is performed purposely using neither arsenic nor antimony (feature 1.3), nor does D19 disclose that the fining is performed in the presence of tin in an amount such that the finished glass comprises at least 0.01 mole percent SnO<sub>2</sub>

(feature 1.4). D19 also does not disclose that MgO must be included, let alone in an amount of 1-3% (feature 1.1).

127. With respect to the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio, D19 discloses in par. [0016] that the liquidus viscosity is strongly influenced by the ratio of the sum of alkaline earths to alumina. The range (0.9-1.2) disclosed in par. [0016] overlaps only partially with the claimed range (i.e. at least 1.0). The most preferred ratio 0.92-0.96 does not overlap.
128. As discussed above, compared to the use of arsenic or antimony for fining, tin is less effective but  $\text{SnO}_2$  is a ubiquitous material which has no known hazardous properties and is therefore safer and more environmentally friendly. The higher MgO amount according to the invention enables the replacement of arsenic and antimony by (the less effective) tin because it makes the fining process easier to perform and more effective. This must be balanced with maintaining the other desirable properties of the glasses, such as lower density and CTE, and a higher chemical durability, strain point, and modulus and finally a viscosity which makes it suitable for downdraw. This is achieved by controlling the amounts of the other oxides and the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio as claimed.
129. The skilled person, starting from D19, would in the opinion of the Court not arrive at the claimed solution without inventive skill.
130. First of all, D19 does not provide a pointer to a downdraw process which is more environmentally friendly because neither arsenic nor antimony are purposely used, let alone that this could be achieved by replacing these fining agents by the less effective fining agent tin and even less so that this is enabled by increasing the amount of MgO to 1-3% whilst carefully controlling the other earth alkaline oxide contents (the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio) as well the  $\text{SiO}_2$  content) as per the solution claimed in the Patent.
131. D19 expresses no specific preference towards the non-use of arsenic or antimony. D19 is not concerned with the problem of providing a more environmentally friendly downdraw process (that does not require the use of environmentally unfriendly hazardous fining agents). The general description of D19 (par. [0029]) mentions that fining agents such as  $\text{As}_2\text{O}_3$ ,  $\text{Sb}_2\text{O}_3$  and  $\text{SnO}_2$  may be present (as part of a longer list of optional fining agents). Most Examples in D19 contain substantial amounts of arsenic or antimony (also see the below discussion in relation to Example 27). The skilled person will note that many Examples have a tin content within the claimed range, but most of these contain tin in combination with arsenic and/or antimony. Tin (specifically  $\text{SnO}_2$ ) is not disclosed or suggested in D19 as a replacement means for arsenic or antimony for fining. In fact, the examples that use neither arsenic nor antimony do not contain any  $\text{SnO}_2$  but do contain  $\text{CeO}_2$ , which does not point the skilled person towards using tin as a fining agent.
132. With regard to MgO, par. [0025] of D19 mentions that 0-3 mol% MgO is present in the glasses of the invention, preferably 0-1 mol%. The preferred MgO range disclosed in D19 thus overlaps only with the claimed range by its upper end point. The Claimant has argued that

par. [0025] teaches that MgO is useful for reducing density and therefore would point the skilled person towards including MgO as this is a desirable property for LCD glasses. However, as pointed out by the Defendant, in the same paragraph, it is also stated that increasing MgO decreases liquidus viscosity which would point the skilled person away from using larger amounts knowing that this would compromise downdraw (the skilled person would note that par. [0025] specifically refers to “smaller amounts of MgO” as beneficial for reducing density). The skilled person will furthermore notice that only 2 out of the 27 Examples contain an amount of MgO within the claimed range – all the other Examples have an amount of MgO below 1.0% including a number of examples without any MgO. Par. [0025] of D19 does not teach or suggest to the skilled person that having 1-3% MgO present in the glass composition allows for the fining without antimony or arsenic.

133. A pointer in the direction of the claimed solution is also not found in the other prior art relied upon by the Claimant in combination with D19. It may be true that, as argued by the Claimant, the skilled person at the priority date was aware that arsenic and antimony were hazardous materials and that therefore there existed a general desire not to use these agents, and it may also be true that tin, as such, was known as an alternative fining agent (see document D17, JP1998059741A, e.g. par. [0005] of D17a, the (undisputed) translation of D17: “As<sub>2</sub>O<sub>3</sub> is very toxic and may pollute the environment in the glass production process or in the treatment of waste glass, and its use is being restricted.”). However, this general statement does not amount to a pointer in the direction of the claimed invention. As discussed above, D19 itself contains no hint whatsoever in the direction of the claimed solution of the objective problem.
134. The general teaching that arsenic or antimony could be replaced by tin as fining agent does not lead the skilled person (with a reasonable expectation of success) to a downdraw process for the production of glasses having the combination of characteristics as desired by the Patent, let alone the glass compositions of the claim. This is in particular so considering the common general knowledge of the skilled person that glass systems like the ones claimed behave unpredictably in the sense that the individual components are interdependent and the effects of adding and leaving out certain components or changing the concentration of individual components are often non-linear (see above under claim construction).
135. Against this background, even if the skilled person, starting from D19, would on the basis of the teaching of D17 be motivated to exchange arsenic and antimony for tin fining, this would not lead the skilled person to the claimed solution. D17 is not focussed on downdraw processes and the requirements for such processes. D17 does not teach, contrary to the Patent, that MgO is required to allow for more environmentally friendly fining without the use of arsenic or antimony, but compromises suitability for downdraw, which then needs to be compensated by keeping the SiO<sub>2</sub> amount and the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio within the claimed ranges. This is also not taught nor suggested by D19. The combination of D19 and D17 therefore does not render the claimed subject matter obvious.

136. Neither the solution as claimed nor a pointer in that direction can be found in document D15 (US 6,537,937). In relation to the use of SnO<sub>2</sub> for the fining step, D15, col. 8, ll. 7 to 17 discloses that “SO<sub>2</sub>, F, Cl, SnO<sub>2</sub>, etc. may be incorporated [...] up to 2 mol%”. This is insufficient to conclude that D15 would motivate the skilled person to replace arsenic and antimony by at least 0.01% SnO<sub>2</sub>. SnO<sub>2</sub> is merely mentioned as an optional component in a list of alternatives without preference or explanation. In addition, the use of arsenic and antimony is not excluded in D15. Their amount is preferably restricted to ≤0.1% (see col.8, ln.15), but may be higher (see col.8, ln. 28-30). The skilled person will moreover note that none of the Examples of D15 contains a fining agent at all. In relation to MgO, document D15 merely suggests that adding 1-4 (most preferably 3.2-4) mole percent MgO may improve the melting properties of a glass, see col. 6, ln 17-32 of D15) but does not do so in the context of the purposive non-use of arsenic or antimony, let alone in the context of a replacement of these fining agents by tin as a fining agent, thereby enabling the production of glass sheets with a downdraw process. Therefore, the skilled person, who does not possess inventive skills and imagination, would not consider changing all of these parameters at the same time – which would be required to arrive at the claimed subject matter – based on a combination of D19 and D15. And even if the skilled person would have considered to do so, they would have been withheld from taking such a step in the absence of a reasonable expectation of success, knowing that these parameters are interdependent and knowing that changes in glass compositions frequently lead to unpredictable results.

*Example 27 of D19*

137. The Claimant has furthermore relied specifically on Example 27 of D19.
138. The Claimant did not provide a justification or explanation why the skilled person would proceed from specifically Example 27 of D19 in isolation. A realistic starting point, in the opinion of the Court, is typically a prior art disclosure as a whole. Absent a specific reason or pointer in the disclosure itself (or based on common general knowledge) to do so, the selection of a particular example composition as a “starting point”, merely because it happens to come “closest” to the claimed subject matter in terms of structural components bears the risk that such selection itself already involves hindsight. In the case of document D19, Example 27 (out of 32 Examples), contains 0.3 mole percent of Sb<sub>2</sub>O<sub>3</sub> whereas Examples 22-25 contain neither arsenic nor antimony. Therefore, the skilled person who is seeking to provide a more environmentally friendly method would rather focus on those examples (in view of the common general knowledge that arsenic and antimony are hazardous substances). As mentioned above, these Examples 22-25, however, do not contain SnO<sub>2</sub> (CeO<sub>2</sub> is used as a fining agent instead) and therefore the skilled person is not pointed in the direction of the solution provided by the Patent (rather pointed in another direction).
139. That being said, even if the skilled person would start from the composition of Example 27, this does not change the analysis of inventive step compared to the general teaching of D19. Example 27 is a glass composition having the following components:

Oxide	amounts [mol %]	claim 1 [mol %]
SiO <sub>2</sub>	68	64.0-71.0
Al <sub>2</sub> O <sub>3</sub>	10.5	9.0-12.0
B <sub>2</sub> O <sub>3</sub>	11	7.0-12.0
MgO:	0	1.0-3.0
CaO:	10.5	6.0-11.5
SrO:	0	0-1.0
BaO	0	0-0.1
Sb <sub>2</sub> O <sub>3</sub>	0.3	-
SnO <sub>2</sub>	0	at least 0.1

140. It can be seen that in Example 27, as mentioned above, antimony is used as fining agent and there is no MgO present. The  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio is 1.00. The skilled person would, for the same reasons as for D19 as a whole, not be motivated to exchange antimony for SnO<sub>2</sub> and, at the same time decide to add 1-3 mole percent of MgO, whilst keeping the SiO<sub>2</sub> amount and the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio within the claimed ranges. Already for the  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$ , the skilled person would not just add MgO without a concrete motivation to do so as this would increase the ratio away from the ratio preferred in D19 (which is below 1.00). For the reasons provided above, the analysis would not be different when taking the disclosure of D15 into account. It cannot be seen how the skilled person *would* starting from Example 27 of D19, with a reasonable expectation of success, arrive at a downdraw method for the production of glass sheets having the characteristics of the claimed method.
141. In conclusion, the subject matter of claim 1 does not follow from D19 in an obvious way, on the basis of D19 alone, or in combination with the other prior art references cited by the Claimant. As claim 1 of the Patent is inventive over D19, also the dependent claims 2 and 3 are inventive over D19.

#### D20 (JP 2004-189535 A)

142. It is not in dispute that D20 is part of the state of the art. The Court agrees with the Claimant that D20 (as follows from its undisputed translation, D20a) qualifies as a realistic starting point since it relates to the use of alkali-free glass for making displays which requires a good etch resistance, low thermal shrinkage and a high strain point (see D20a, par.[0004]), similar to the Patent. The general description discloses downdraw as a suitable process for making the glasses of the invention, albeit as one of several suitable methods (par. [0036]). The skilled person would thus (at least also) be interested in D20.
143. Within D20, the Claimant selected two examples as starting points for the inventive step analysis. Neither of the examples relied upon by the Claimant leads the skilled person to the claimed solution in an obvious way.

144. The Claimant provided calculations for the conversion of the relative amounts of the various components of the glasses in examples 15 and 10 of D20 which calculations have not been disputed by the Defendant (see tables below).

*Example 15*

145. Example 15 discloses a glass composition having the following components, table taken from the Claimant (undisputed):

Oxide <sup>3</sup>	wt. %	mol %	claim 1
SiO <sub>2</sub>	62.0	67.20	64.0-71.0
Al <sub>2</sub> O <sub>3</sub>	16.0	10.22	9.0-12.0
B <sub>2</sub> O <sub>3</sub>	11.0	10.29	7.0-12.0
MgO:	1.3	2.10	1.0-3.0
CaO:	8.0	9.29	6.0-11.5
SrO:	1.0	0.63	0-1.0
BaO	0.5	0.21	0-0.1
SnO <sub>2</sub>	0.1	0.04	at least 0.01
Sb <sub>2</sub> O <sub>3</sub>	0.1	0.02	-

146. First of all, the Court notes with respect to the selection of Example 15, that only three Examples in D20 contain neither arsenic nor antimony. These are different examples: 10, 14 and 18. Therefore, it is already doubtful that the skilled person who wishes to solve the objective problem of finding a more environmentally friendly method for the production of glass sheets would focus on Example 15. It appears that Example 15 is the only one which has an MgO amount (2.1 mole%) within the claimed range but no reasons are provided in D20 itself nor in the common general knowledge that would direct the skilled person's attention specifically to Example 15.
147. The difference between the claimed subject matter and D20, Example 15, is that Example 15 contains antimony whereas the claim requires the purposive non-use of antimony. Example 15 also has a higher BaO amount compared to the claim (see table above). This is not in dispute between the parties.
148. In the opinion of the Court, there is already no pointer in D20 that would prompt the skilled person towards purposely not using antimony. To the contrary, D20 teaches the use of antimony to obtain glass without bubbles, i.e. as a fining agent, albeit in a controlled amount

below 1.0% (see par. [0019] of D20, cited by the Claimant in par. 169 of the Revocation action). Only 3 out of 20 Examples in D20 do not contain antimony. In view of this teaching, the skilled person would not be motivated by D20 to purposely not use  $\text{Sb}_2\text{O}_3$ . Nevertheless, even if it were assumed for the benefit of the Claimant that the skilled person would generally be motivated to replace antimony as it was known to be hazardous, and even assuming that the skilled person would consider using tin as a fining agent instead (for instance on the basis of the teaching of document D17 which has been cited by the Claimant as a secondary reference, discussed above in the context of D19), none of these prior art references would prompt the skilled person to at the same time lower the BaO amount, with a reasonable expectation of providing a downdraw method for the production of glass sheets as claimed, especially against the background of the known unpredictable behaviour of glass compositions such as these, as discussed above.

149. The Claimant is correct in arguing that D19 discloses in par. [0028] that BaO has a negative impact on the glass density and that the glasses of D19 are “essentially free” of BaO, meaning that the amount is less than 0.1 mole%. Accordingly, none of the Examples of D19 contain BaO. However, this does not mean that the skilled person, starting from Example 15 of D20, and faced with the objective problem, would leave out BaO. The Defendant has argued in a substantiated way that the skilled person would be concerned that leaving out BaO from the glass composition of Example 15 of D20 would reduce the viscosity of that glass composition making the composition unsuitable for downdraw (also see par. [0060] of the Patent). There is therefore no motivation for the skilled person to, starting from Example 15 in D20, replace antimony by tin and, at the same time, leave out BaO, with a reasonable expectation of successfully arriving at a downdraw process as claimed.

*Example 10*

150. Example 10 discloses a glass composition having the following components, table taken from the Claimant (undisputed):

Oxide	wt. %	mol %	claim 1
SiO <sub>2</sub>	64.0	69.59	64.0-71.0
Al <sub>2</sub> O <sub>3</sub>	16.0	10.25	9.0-12.0
B <sub>2</sub> O <sub>3</sub>	11.0	10.32	7.0-12.0
MgO:	0	0	1.0-3.0
CaO:	8.0	9.32	6.0-11.5
SrO:	0.5	0.32	0-1.0
BaO	0.1	0.04	0-0.1
SnO <sub>2</sub>	0.2	0.09	at least 0.01
Cl	0.2	0.07	not excluded

151. As follows from the table above Example 10 of D20 does not comply with two elements of claim 1 of the patent in suit: the amount of MgO is outside the claimed range (0 versus 1.0-3.0%) and the ratio  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  (0.944) is lower than the claimed threshold of greater than or equal to 1.0. This is not in dispute between the parties.
152. According to the Claimant, secondary document D15 (col.6, ln.17-27), already discussed above, discloses a most preferred range of 1-2 mole percent of MgO. Therefore, it would be obvious for the skilled person first of all to add MgO to the composition of Example 10 of D20, and secondly in an amount which is covered by the patent in suit; when 1-2% Mg is added, also the ratio  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  increases automatically to more than 1.0, i.e. within the claimed range of the Patent.
153. However, the Court is not convinced that the teaching of D15 would prompt the skilled person to implement the inclusion of 1-2 mole percent MgO starting from D20 as a next step when faced with the objective problem. In D15, in the passage cited by the Claimant, the preferred range of 1-2 mole percent is disclosed to prevent devitrification. However, in order to lower specific gravity (which corresponds to the density) or to further improve the melting property of the glass, most preferably, at least 3.2% MgO is included. The upper limit of the claimed range is 3.0 mole percent MgO. This preference for higher MgO concentrations is confirmed by the examples of D15, of which just three out of the 64 Examples comply with the 2% limit, while many other examples have MgO concentrations which are higher, even much higher than the limit set by the Patent (1-3%). Faced with the objective technical problem, which includes producing glass sheets exhibiting properties that make them suitable for use in (AMLCD) display applications (a.o. a low density), the skilled person in view of the teaching of D15 perhaps *could* have, but not *would* have been motivated to select an MgO concentration that falls within the claimed range.

154. Moreover, the general teaching in D15 pointing towards higher MgO concentrations raises doubt as to whether the skilled person would have a reasonable expectation that the composition obtained starting from Example 10 of D20 would have a viscosity that enables a downdraw process. The Patent discloses in par. [0056] that it was believed in the prior art that MgO concentrations equal to or greater than 1 mole percent raised liquidus temperatures (lowered liquidus viscosities), thereby compromising high viscosity forming processes, such as, downdraw processes, e.g., fusion processes. This is overcome by the Patent by the combination of features as claimed. D15 mentions downdraw amongst other alternatives such as a float process (col.8, ln.51). Both parties agree that only Examples 53 and 55 of D15 are suitable for downdraw and have MgO contents within the claimed range; but, as said above, these Examples go against the general preference of D15 towards a higher MgO content. Without a pointer to do so, selecting these examples as guidance for the modification of Example 10 of D20, is according to the Court only possible with using hindsight (which must be avoided).
155. The Claimant also relies on a combination with document D19 in support of a lack of inventive step starting from example 10 of D20. As already discussed above, D19 neither points in the direction of the claimed MgO concentration nor towards the claimed  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  ratio. Without any additional substantiation, which is lacking, it has not been established that the skilled person, starting from example 10 of D20 would arrive at the claimed subject matter by considering D19.
156. The PRV Consulting Report relied upon by the Claimant in support of its inventive step attack (document D20b) does not lead the Court to a different conclusion on inventive step starting from D20. The report starts its analysis from the premise that the differences identified between D20 (the report focusses on Example 15), i.e. the presence of antimony oxide and the BaO content, give rise to different technical effects which are not deemed to be synergetic. The report then goes on to discuss each of the effects (problems) separately in view of the prior art and concludes that the solution to each problem is obvious. Leaving aside that the Court comes to a different conclusion for the reasons given above, the approach taken in the report is legally flawed because the claim features of the Patent, even if they would not be *synergetic* in the sense of having a special combination effect, are in any event *interdependent* in providing a solution to the objective problem (see claim construction above). This is the inventive concept underlying the invention. Ignoring these interdependencies and dividing the objective problem up into separate problems amounts to hindsight reasoning which is to be avoided in the assessment of inventive step.
157. In summary, none of the inventive step attacks starting from D20 succeed. As claim 1 is not obvious over D20, the dependent claims 2 and 3 are not obvious either.

D27 (JP2001348247A) – Example 10

158. It is not in dispute that D27 is part of the state of the art. According to the (undisputed) English translation, the “effect of the invention” of D27 is “To provide various displays and photographs which do not substantially contain an alkali metal oxide, have a high strain point, a high Young’s modulus, a low density and a low expansion coefficient, and are excellent in BHF resistance and acid resistance” (par. [0039] of D27a). Par. [0027] of D27a discloses a list of fining agents and explicitly mentions that  $\text{As}_2\text{O}_3$  or  $\text{Sb}_2\text{O}_3$  are preferably not used for environmental reasons (see also last line of [0016]).  $\text{SnO}_2$  is mentioned in a list of 5 alternatives ( $\text{Fe}_2\text{O}_3$ ,  $\text{SO}_3$ , F, Cl,  $\text{SnO}_2$ ) albeit without any preference.
159. Although downdraw is mentioned as a suitable process, the focus of D27 is on float methods as preferred manufacturing process (D27a, [0029]). A high viscosity, which is required for a downdraw process, is not mentioned in D27. According to the Defendant, the viscosity of the melted glasses described in D27 is far too low to be suitable for downdraw. Moreover, the Patent seeks to provide a method for commercial (i.e. large scale) manufacturing (par. [0017], last line) while D27 prefers the float method for “mass production” (D27a, [0029]). This makes it in the view of the Court already doubtful whether D27 is a realistic starting point for the skilled person.
160. Within the entire disclosure of D27, the Claimant focusses on Example 10 selected out of 13 Examples in total, as starting point. Example 10 arguably has the most features in common, i.e. the ratio  $\Sigma[\text{RO}]/[\text{Al}_2\text{O}_3]$  and (only) two oxides that are out of the claimed ranges (i.e. 72 mole percent  $\text{SiO}_2$  and no  $\text{SnO}_2$ ).
161. Proceeding from the assumption that the skilled person would start from this example, the Claimant argues that adjusting these two differences would be a matter of routine experimentation for the skilled person.
162. However, in the opinion of the Court, the approach taken by the Claimant is based on hindsight. As mentioned above, Document D27 does not relate specifically to downdraw processes. Example 10 does not focus on downdraw. Although par. [0027] of D27 discloses that  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$  are preferably not used, none of the Examples contains  $\text{SnO}_2$  as an alternative fining agent. There is as a consequence no pointer to be found in D27 towards fining in the presence of tin (in an amount such that the finished glass comprises at least 0.01 mole percent  $\text{SnO}_2$ ), let alone as part of a downdraw method for producing glasses. Furthermore, there is no teaching in D27 that would prompt the skilled person to (at the same time as implementing the tin fining step in a downdraw process) change the  $\text{SiO}_2$  concentration to fall within the claimed range with a reasonable expectation of solving the objective problem. Especially against the background of the skilled person being aware of the interdependencies of the various features of the claims (as discussed above), it does not suffice to point out that in the prior art the various features were known individually. That ignores the inventive concept of the present invention which is the combination of features

as claimed. Only with hindsight would the skilled person arrive at the claimed subject matter starting from Example 10 of D27.

163. The same applies when the secondary references D19 and D15 relied upon by the Claimant are considered in combination with Example 10 of D27. As already discussed above, D19 does not teach or suggest the replacement of arsenic and antimony by tin as a fining agent. Examples 22 to 25 of D19 are the only compositions that do not contain arsenic or antimony, but these examples do not use tin as a fining agent ( $\text{CeO}_2$  is used instead). The Court does not see how the skilled person on the basis of D19 would refrain from the use of arsenic and antimony, at the same time decrease the  $\text{SiO}_2$  concentration, whilst maintaining all other components within the claimed ranges, as a next step when trying to solve the objective problem.
164. The same reasoning applies to document D15. As discussed above,  $\text{SnO}_2$  is merely mentioned as an optional component in a (short) list of alternatives without preference or explanation. In addition, even though the glasses of D15 are “essentially free of” arsenic and antimony, the use of arsenic and antimony is not excluded in D15. Their amount is preferably restricted to  $\leq 0.1\%$  (see col.8, ln. 15), but may be higher (see col.8, ln. 28-30). The skilled person will moreover note that none of the Examples of D15 contains a fining agent at all. Therefore, also when the skilled person would consider D15, they would not be prompted to implement tin fining as a next step, let alone whilst at the same time decreasing the  $\text{SiO}_2$  concentration whilst maintaining all other components within the claimed ranges, as a next step when trying to solve the objective problem.

#### Other (prior art) documents referred to by the Claimant

165. None of the other prior art documents referred to by the Claimant (D11, D13, D14 or D16) in combination with any of the starting points discussed above lead to a different conclusion with regard to inventive step.
166. At best, these prior references teach in general terms that instead of  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$ ,  $\text{SnO}_2$  may be used for fining. However, as discussed above, this information as such does not point the skilled person towards the claimed solution of the technical problem, i.e. a downdraw method characterised by the combination of features in the claim resulting in glasses that are suitable for display applications.
167. Specifically, D11 is primarily concerned with a process for the low vacuum refining of alkali-free aluminoborosilicate glass melts (as already discussed under novelty above). Downdraw is only mentioned once (in claim 15) as one example of a method that can be used in conjunction with the claimed method. Therefore, D11 does not point the skilled person towards the claimed downdraw process. In D13, the use of  $\text{SnO}_2$  as a fining agent is described specifically for compositions that can be formed with a float process and thus would not point the skilled person towards the claimed solution either as it is not in dispute between the parties that the float process and the downdraw process have very different

requirements, especially in relation to the liquidus viscosity which must be much higher for drawdown. D14 also relates to float processes and already for that reason does not point the skilled person in the direction of the claimed solution. D16 teaches in par. [0018] that  $\text{Sb}_2\text{O}_3$  can be added as refining agents in addition to sulfates and  $\text{SnO}_2$ . The claimed solution, however, requires the purposive non-use of antimony (and arsenic).

168. The conclusions reached by this Court are not affected by the administrative judgment of the Supreme People's Court of the Peoples Republic of China that was submitted by the Claimant (documents D42-D45), against the submission of which the Defendant objected as being late-filed. This judgment is not considered to be relevant for the outcome of this case because it is based on a patent related to, but different from the Patent, having different claims. Moreover, the assessment that the claims of the Chinese patent lacked inventive step was based on a prior art document related to, but different from, D19 in the present proceedings. In addition, the Chinese court applied a Chinese law test for inventive step which appears to be different from the UPC approach. As this decision does not change the outcome of this case, it is not necessary to decide on its formal admissibility.
169. The same applies to the experimental report D41 which has been objected against by the Defendant as being late-filed. This report was submitted by the Claimant as being relevant for the patentability of the auxiliary requests. As none of the attacks on the Patent as granted succeeds, the condition under which the auxiliary requests have been made is not fulfilled and the auxiliary requests need not be discussed. Therefore, no decision on the admissibility of D41 needs to be taken.
170. In conclusion none of the prior art references relied upon by the Claimant either alone or in combination take away the inventiveness of claim 1 of the Patent. As the subject matter of claim 1 is inventive, so are claim 2 and 3 which are dependent on claim 1 and only add further features.

#### VII. Legal consequences

171. The legal consequence of the above is that the Claimant's request to revoke the Patent must be rejected. As a consequence, the revocation action is dismissed.
172. The Court does not have to decide on the conditional application to amend the Patent, as the condition under which that application was made (i.e. that the Patent as granted could not be maintained) is not fulfilled.
173. Pursuant to Art. 69(1) UPCA in conjunction with R. 118.5 RoP, the Court shall decide on the obligation to bear costs. As follows from the above, the Defendant is to be regarded as the successful party. Therefore, the Claimant, as the unsuccessful party, must bear the legal costs and other expenses incurred by the Defendant. No reasons have been brought forward or are apparent to the Court as to why equity would require otherwise.

174. The value of the case was already set by the judge-rapporteur at EUR 6.250.000 (order dated 1 December 2025). Based on the table of maximum amounts for recoverable costs (published by the Administrative Committee on 24 April 2023 as D-AC/10/24042023\_D) for a value in dispute of EUR 6.250.000, the ceiling is EUR 600.000.

Decision

1. The revocation action is dismissed.
2. The Claimant as the unsuccessful party shall bear the legal costs incurred by the Defendant.

<p>András Kupecz Presiding judge</p>	<p><b>András Ferenc Kupecz</b>  Digital unterschrieben von András Ferenc Kupecz Datum: 2026.02.19 15:23:26 +01'00'</p>
<p>Rudi Goedeweck Technically qualified judge</p>	<p><b>Rudi Auguste B Goedeweck</b>  Digitally signed by Rudi Auguste B Goedeweck Date: 2026.02.19 15:01:14 +01'00'</p>
<p>Daniel Severinsson Legally qualified judge</p>	<p><b>Sven Daniel Severinsson</b>  Digitally signed by Sven Daniel Severinsson Date: 2026.02.19 15:10:10 +01'00'</p>
<p>For the deputy-registrar</p>	<p><b>Natalie Gnaß</b>  Digital unterschrieben von Natalie Gnaß Datum: 2026.02.23 08:54:43 +01'00'</p>

This decision was read out in open court on 24 February 2026.

#### Information about appeal

An appeal against the present Decision may be lodged at the Court of Appeal, by any party which has been unsuccessful, in whole or in part, in its submissions, within two months of service of the decision (Art. 73(1) UPCA, R. 220.1(a), 224.1(a) RoP).

#### Information about enforcement

Art. 82 UPCA, Art. 37(2) UPCS, R. 118.8, 158.2, 354, 355.4 RoP:

An authentic copy of the enforceable decision will be issued by the Deputy-Registrar upon request of the enforcing party, R. 69 RegR.