Unified Patent Court
Einheitliches Patentgericht
Juridiction unifiée du brevet

Mannheim Local Division
UPC_CFI_819/2024
(CCfR: UPC_CFI_414/2025)

Decision

of the Court of First Instance of the Unified Patent Court

Local Division Mannheim

delivered on 16 April 2026

CLAIMANT:

Corning Incorporated,
One Riverfront Plaza - 14831 - Corning - US

represented by: Marcus Grosch

DEFENDANTS:

1) **TCL Deutschland GmbH & Co. KG**
Bernhard-Wicki-Straße 5 - 80636 - München – DE

2) **TCL Deutschland Verwaltungs GmbH**
Bernhard-Wicki-Straße 5 - 80636 - München – DE

3) **TCL Operations Polska, Sp. z o.o.**
ul. A. Mickiewicza 31/41 - 96-300 - Zyrardów – PL

4) **TCL Belgium, SA**
Rue du Paruck 35/19, 1080 Molenbeek-Saint-Jean – BE

Defendants represented by: Felix Rödiger

PATENT AT ISSUE: EP 3 296 274

PANEL/DIVISION:

Panel of the Local Division in Mannheim

DECIDING JUDGES:

This decision is delivered by the Presiding Judge Tochtermann, the Judge-rapporteur Sender, the legally qualified Judge Rinkinen and the technically qualified Judge Goedeweeck.

LANGUAGE OF THE PROCEEDINGS: English

SUBJECT OF THE PROCEEDINGS: Patent infringement action and Counterclaim for revocation

DATE OF THE ORAL HEARING: 3 March 2026

SUMMARY OF FACTS:

1. Claimant is suing Defendants for the alleged direct infringement of the national German part of the European patent EP 3 296 274 (patent-in-suit, Exhibit QE10), which relates to alkali-free, boroalumino silicate glass sheets. The mention of the grant of the patent-in-suit was published on 26 April 2023. It was filed on 28 June 2006 (Exhibit CC7), claiming the priority of an U. S. application of 28 June 2005. The patent-in-suit is a divisional application of parent application EP 1 899 275, published as WO 2007/002865 (Exhibit CC2). An opt-out from the jurisdiction of the UPC has not been declared.

2. Claimant, a designer and manufacturer of glass substrates, is the sole registered proprietor of the European patent EP 3 296 274 which is in force in Germany and France (Exhibit QE11). For the UPCA contracting member state Germany, Claimant is seeking injunctive relief, recall/definite removal, destruction, communication of information, interim awards of costs, publication of the decision on the merits in public media and a declaration on Defendants' liability for damages.

3. Claimant has originally asserted the same claims against former Defendants 1 and 2 (Defendants-Hisense) and former Defendants 7 to 9 (Defendants-LG Electronics).

4. Following an out-of-court settlement, the Local Division Mannheim permitted the partial withdrawal of the Infringement action against (former) Defendants-LG Electronics with their consent during the written procedure. The same applies to the partial withdrawal of the corresponding Counterclaim for revocation (UPC_CFI_414/2025) filed by Defendants-

LG Electronics jointly with Defendants. For further details, reference is made to the Order of the Judge-rapporteur of 3 October 2025.

5. Following a further out-of-court settlement during the interim procedure, the Local Division Mannheim also permitted the partial withdrawal of the Infringement action against former Defendants-Hisense with their consent. The same applies to the withdrawal of the corresponding Counterclaim for revocation (UPC_CFI_416/2025) filed by Defendants-Hisense. For further details, reference is made to the Order of the Judge-rapporteur of 18 February 2026.

6. Claim 1 of the patent-in-suit, on which the alleged direct infringement is based on, reads as follows in the language of the patent:

> 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_2: | 64.0-71.0 |
> | Al_2O_3: | 9.0-12.0 |
> | B_2O_3: | 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 $\Sigma[RO]/[Al_2O_3]$ ratio greater than or equal to 1.0, where $[Al_2O_3]$ is the mole percent of Al_2O_3 and $\Sigma[RO]$ 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_2.

7. Defendants (hereinafter also: Defendants-TCL) are part of the TCL Technology Group (TCL), a Chinese partially state-owned electronics company headquartered in Huizhou, Guangdong, China. TCL develops, manufactures, and sells – *inter alia* – consumer electronics including display devices such as TVs.

8. Defendant 1, TCL Deutschland GmbH & Co. KG (former Defendant 3), is a German limited liability partnership (GmbH & Co KG) with registered offices in Munich. Defendant 1 is the German distribution entity of TCL and, in particular, responsible for importation and sale of electrical household appliances including, in particular, TVs and related customer services.

9. Defendant 2, TCL Deutschland Verwaltungs GmbH (former Defendant 4), is organized as a German limited liability company (GmbH) with registered offices in Munich and is the general partner (in German: Komplementär) of Defendant 1.

10. Defendant 3, TCL Operations Polska, Sp. z o.o. (former Defendant 5), is organized as a Polish limited liability company (Sp. z o. o.) with registered offices in Żyrardów. Defendant 3 operates one of the main production sites of TCL in Europe for electronic devices and, in particular, produces TVs, including TVs that are marketed and sold in Germany.

11. Defendant 4, TCL Belgium, SA (former Defendant 6), is a Belgian limited company (SA) with registered offices in Brussels. Defendant 4 holds 100% of the shares in Defendant 3.

12. Claimant aims with its Infringement action at glass sheets manufactured by using the method of claim 1 of the patent-in-suit by unlicensed suppliers, in particular – but not limited to – *Irico*, referring to the glass sheet manufacturer *Caihong Display Devices* Co., *Ltd.* or its affiliates or subsidiaries (cf. Exhibit QE14, p.4), which are afterwards supplied to manufacturers of Liquid Crystal Displays (LCDs), incorporated into consumer electronics devices, such as LCD-TVs, which are then placed on the market in Germany by Defendants (attacked embodiments).

13. As an exemplary TV model marketed by Defendants in Germany that incorporates these glass sheets, Claimant names *"TCL 32L5A"*. According to Claimant, the subject matter of its infringement allegation was, however, not restricted to the glass sheets incorporated into this exemplary TV model, but would rather encompass all of Defendants' products in which glass sheets are used that are essentially identical in terms of the technical teaching of the patent-in-suit.

14. In addition, Claimant submitted with the SoC – *inter alia* – a report of its private expert concerning EDS-tests (Energy Dispersive Spectroscopy quantitative analysis) carried out on glass sheets incorporated in TVs marketed in USA by Defendants' affiliates (Exhibit QE14, concerning model *"TCL 32S357",* allegedly corresponding to "*TCL 32L5A*" marketed in Germany) and additional Exhibits relating to the alleged glass sheet supplier (*Irico*) and the alleged use of a downdraw process (Exhibit QE15 to QE18) to confirm infringement of the glass sheets included in the exemplary TV model "*TCL 32L5A"* marketed in Germany. In Claimant's view, this would be possible because there were no differences between

the US and European models in terms of the composition and manufacturing process of the glass and/or the supplier.

15. Furthermore, after Defendants criticised the tests carried out by Claimant in the Statement of Claim and disputed that a test of an US model would be sufficient to substantiate the alleged infringement in Germany, Claimant purchased six TV's of the exemplary model "*TCL32L5A"* for the German market (Exhibit QE 24) between November 2024 and December 2024 and conducted tests with other analytic techniques (X-ray Fluorescence Analysis, *XRF*, and Inductively Coupled Plasma Optical Emission Spectroscopy, ICP), preferred by Defendants instead of EDS, which showed that the glass sheets in the tested TVs (LCD-panels) have a chemical composition in accordance with claim 1 of the patent-in-suit (cf. Exhibit QE 21), which was not contested by Defendants.

16. Claimant also initiated separate proceedings against a manufacturer of glass sheets, *Irico*, and various manufacturers of LCD-panels, such as *TCL China Star Optoelectronics* Technology (CSOT), pending before the Local Division Mannheim due to service being necessary abroad under the Hague Convention (UPC_CFI_820/2024).

17. Furthermore, another company of the TCL Group, *TCL EUROPE SAS*, filed a parallel Revocation action before the Central Division Munich (UPC_CFI_337/2025) concerning the patent-in-suit. This company is not a Defendant in either the present (UPC_CFI_819/2024) nor in the further above-mentioned infringement proceedings (UPC_CFI_820/2024). The Central Division Munich rendered its decision on 24 February 2026(hereinafter also: "Decision CD Munich"), and dismissed the Revocation action. For further details, reference is made to said decision. TCL EUROPE SAS based its request for revocation of the patent-in-suit in the revocation proceedings essentially on the same grounds, facts and evidence as Defendants-TCL in their Counterclaim for revocation (UPC_CFI_414/2025) in the present proceedings.

18. Several orders pursuant to R. 262A RoP have been issued in the course of the proceedings, in particular relating to technical specifications and the channel of distribution of specific TV-models marketed by Defendants, which also established access restrictions *vis-à-vis* former Defendants-Hisense and Defendants-LG Electronics, and to an agreement between Claimant and a third party (cf. orders pursuant to R. 262A RoP of 6 June 2025, of

19 August 2025, of 7 October 2025, of 16 October 2025, of 8 January 2026 and of 2 February 2026).

19. Defendants 1 to 4 raised preliminary objections pursuant R. 19 RoP and requested – *inter alia* – to dismiss the proceedings because Claimant could not rely on Art. 33(1)(a) UPCA to establish the local competence of the LD Mannheim. Further, Art 33(1)(b) UPCA would demand to sue producers of LCD-TVs and suppliers of glass sheets together and thereby establish a commercial relationship. The former Judge-rapporteur, Presiding Judge Tochtermann, rejected the preliminary objections by Order of 3 April 2025, which was not subject of a panel review or an appeal. For further details, reference is made to this Order.

REQUESTS OF THE PARTIES

20. Claimant requests:

I. The Defendants are ordered,

to cease and desist from

offering, placing on the market, using or importing or storing for those purposes in Germany glass sheets, in particular as built into liquid crystal displays of electronic devices, obtained directly by 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_2: 64.0-71.0
  Al_2O_3: 9.0-12.0
  B_2O_3: 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 $\Sigma[RO]/[Al_2O_3]$ ratio greater than or equal to 1.0 where $[Al_2O_3]$ is the mole percent of Al_2O_3 and $\Sigma[RO]$ 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_2;

(direct infringement of claim 1)

especially if,

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_2.

(direct infringement of claim 3)

II. The Defendants are further ordered, within a period of 30 days after service of the notification within the meaning of R. 118.8 sentence 1 RoP and, if applicable, the certified translation,

1. to provide Claimant with information in the form of an Excel spreadsheet on the extent to which the Defendants have committed the acts referred to under I. since April 26, 2023, the information being provided for each month of a calendar year and the infringing products referred to under I. and specifying:

   a) the origin and distribution channels of the infringing products, including names and addresses of suppliers and other prior owners as well as of commercial customers and points of sale for which the infringing products where destined;

   b) the quantities produced, manufactured, delivered, received or ordered, as well as the price paid or received for the infringing products;

   c) the identity of any third person involved in the production or distribution of the infringing products, the number and dates of the products offered;

   d) the advertising carried out, broken down by advertising medium, its distribution, the distribution period and the distribution area; including evidence of these advertising activities; and

   e) the costs, broken down by individual cost factors and the profits achieved,

   whereas copies of the relevant purchase documents (namely invoices, alternatively delivery receipts) are to be submitted as proof of the information, whereas confidential details beyond the information identified above may be redacted;

2. to recall the infringing products referred to under I. and placed on the market since April 26, 2023 from the channels of commerce by requesting third parties that have been supplied with the infringing products to return the products to the Defendants, pointing out that this Court has found that the products infringe EP 3 296 274, and to bindingly assure the third parties that the Defendants will reimburse the costs incurred, bear the packaging and transport costs incurred,

reimburse the customs and storage costs associated with the return of the products and take back the products;

3. to remove the infringing products referred to under I. and placed on the market since April 26, 2023 from the channels of commerce definitively by informing third parties that are in the possession of the infringing products to return the products to the Defendants, pointing out that this Court has found that the products infringe EP 3 296 274, and to cancel all orders relating to the products referred to under I.;

4. to destroy at their own expense the products referred to under I. in their direct and/or indirect possession and/or ownership;

and to provide the Court and the Claimant, within the aforementioned period of 30 days from the service of the notification within the meaning of R. 118.8 sentence 1 RoP and, where applicable, the certified translation, with written proof of the action taken under II.1.-4.

III. The Defendants are ordered, to pay to the Court

1. a recurring penalty payment for each act of non-compliance with the order under I of at least EUR 2,000.00 for each infringing product;

2. a recurring penalty payment of at least EUR 1,000.00 per day for each day of non-compliance with the order under II.

IV. The Defendants are ordered to pay to Claimant as an interim award of damages EUR 150,000.00.

V. It is declared that the Defendants have to compensate the Claimant for any further damages incurred since April 26, 2023 or to be incurred in the future as a result of all past and future actions under I.

VI. Claimant is permitted, at Defendants' expense, to announce and publish the decision in whole or in part in public media, in particular on the internet.

VII. The Defendants bear the costs of the proceedings.

21. Defendants request:

1. to dismiss the action (UPC_CFI_819/2024);

2. to order the claimant to bear the costs of the proceedings;

in the alternative, if the Court finds the patent in suit to be valid and infringed,

3. to make the provisional enforcement of the decision by the Claimant dependent on the provision of security in the amount of, at least, EUR 5.000.000, which may also be in the form of a bank guarantee (Art. 82(2) UPCA, R. 352.1, 354.1 RoP).

COUNTERCLAIM FOR REVOCATION

22. With regard to their Counterclaim for revocation (UPC_CFI_414/2025, originally filed jointly with Defendants-LG Electronics) Defendants request:

    1. the revocation of the European patent EP 3 296 274 B1 in its entirety for the territory of the UPC member states Germany and France (R. 25 RoP UPC);

    2. to order the Claimant to bear the costs of these proceedings (Art. 69(1) UPCA);

    3. [a procedural request regarding the interim procedure, which is not of interest here].

23. Claimant requests:

    The counterclaim for revocation is dismissed and the European Patent EP 3 296 274 B1 is maintained as granted.

24. In its conditional Application to amend the patent, Claimant relies on twenty auxiliary requests 1 to 20 (cf. Exhibits QE19 and QE31 to QE50 and – in a marked-up version high-lighting the respective amendments – Exhibits QE31a to QE51a)

25. Defendants request,

    to dismiss patentee's application to amend the patent in suit and thus reject all auxiliary requests 1 to 20 filed as exhibits QE 31 to QE 50.

POINTS AT ISSUE

26. The parties are in dispute about different aspects of the case at hand.

INFRINGEMENT

27. Claimant asserts that the accused products were any glass sheets from unlicensed suppliers, in particular from *Irico*. The compositional analyses performed by its private expert and the analysis performed on TVs marketed in the US were representative also for the corresponding glasses in the TV model *"TCL 32L5A"* marketed in Germany. Contrary to Defendants' arguments, the subject matter of the case was in no way limited to glass sheets included in this specific TV model, which was only used as a non-limiting example. In order to sufficiently dispute the infringement contentions, Defendants would have had to state and substantiate – *quod non* – that none of their devices for the German market have incorporated or will incorporate glass sheets that fall under the claimed teaching

and that have been supplied by an unlicensed manufacturer such as, in particular, *Irico*.

28. Defendant 4 could put an end to the infringing acts of Defendant 3 on the basis of its power to control and instruct its subsidiaries, but did not do so despite being aware of the infringing acts. Accordingly, Defendant 4 was responsible for the infringing acts committed by Defendant 3.

29. Defendants opine that Claimant had failed to provide sufficient evidence or concrete evidence to substantiate allegations of infringement for the accused products. Rather, Claimant relied in the SoC on inconclusive and unreliable chemical analyses of products marketed in the US. The EDS analysis performed on US market samples lacked the precision required for light and trace elements, rendering its conclusions invalid for establishing infringement in the European market. Furthermore, with regard to the use of arsenic and antimony as fining agents, no TV models were tested, but rather a sample glass sheet allegedly produced by *Irico*. Claimant's assertion that US TV models would "correspond" to German TV models were speculative and unsupported by evidence. No reliable or legally relevant inference could be drawn from test results concerning LCD-TVs marketed in the USA to establish infringement by LCD-TVs sold in Germany. The belated test results submitted by Claimant in its Reply had no bearing on TCL's current production. In fact, all LCD-TVs currently produced by Defendants for the German market do not infringe the patent-in-suit.

30. Claimant's allegations concerning Defendant 4 would fail to establish any independent infringing acts committed by Defendant 4. As a mere holding company, Defendant 4 lacked operational control over the allegedly infringing activities of Defendant 3.

31. The rights conferred by the patent-in-suit were also partially exhausted. Defendants' suppliers of LCD panels would partly use glass sheets manufactured by Corning itself, which therefore obviously could not be subject to the operative part of the injunction, as the patent rights were exhausted with respect to glass sheets put on the market by the patentee itself. Due to the scope of the claims, the question of exhaustion had already to be taken into account in the decision on the merits.

32. Defendants further assert that, in response to Claimant's allegations, they had questioned the supplier *Irico* bout the chemical composition of its product. […]. Accordingly, Defendants would currently not infringe the patent-in-suit.

33. In the case at hand, issuance or enforcement of a permanent injunction, destruction, recall and/or final removal from the channels of commerce would at any rate prove to be disproportionate and the further legal claims sought could at any rate only be granted in modified or limited form.

34. For further details, it is referred to the parties' briefs and the corresponding Exhibits.

COUNTERCLAIM FOR REVOCATION

35. Defendants base their Counterclaim for revocation on the following grounds of Art. 138 EPC in conjunction with Art. 65 (2) UPCA:

- lack of novelty (Art. 138(1)a) in conjunction with Art. 54 EPC),
- lack of inventive step (Art. 138(1)a) in conjunction with Art. 56 EPC),
- lack of disclosure in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art (Art. 138(1)b) EPC),
- added matter (Art. 138(1) c) EPC).

36. Defendants argue that the subject-matter of the patent-in-suit lacks novelty in view of

- WO 2006/115997 A2 (WO'997/Exhibit CC9),
- WO 02/098810 A1 (WO'810/Exhibit CC11),

37. Defendants further argue that the subject-matter does not involve an inventive step,

> starting from any one of the documents US 2002/0082158 A1 (US'158, Exhibit CC19, in particular example 27), Examples 10 or 15 of JP 2004-189535A (JP'535, Exhibit CC20, submitted as a certified translation as Exhibit CC20a) and Example 10 of JP2001-348247A (JP'247, Exhibit CC27, submitted as a machine translation as Exhibit CC27a) in conjunction with common general knowledge as reflected in several other prior art documents.

38. Claimant rejects the attacks on the validity of the patent-in-suit as unfounded.

39. For further details, it is referred to the parties' briefs and the corresponding Exhibits.

REASONS FOR THE DECISION

40. Both, the Infringement action and the Counterclaim for revocation are admissible. The Infringement action directed against Defendants 1 to 3 is predominantly successful, whereas the Counterclaim for revocation is unfounded. The Infringement action directed against Defendant 4 is unfounded.

ADMISSIBILITY

41. The UPC has international jurisdiction pursuant to Art. 7(2) in conjunction with Art. 71b (1) of the Brussels I recast Regulation and the Local Division Mannheim is competent for deciding upon the Infringement action under Art. 33 (1) (a) UPCA. The panel agrees with the assessment of the former Judge-rapporteur concerning Defendants' preliminary objections and refers to the Order of 3 April 2025 for further details.

42. The international jurisdiction for the Counterclaim for revocation being directed against Claimant as an owner of a European Patent with national parts being in force in Germany and France follows from Art. 31 UPCA, Art. 71b (1), Art. 24 (4) of the Brussels I recast Regulation. The competence of the Local Division Mannheim follows from Art. 33 (3) (a) UPCA.

43. A further legal interest with regard to the requested revocation of the national French part of the patent-in-suit is not required, even though Claimant only asserts infringement of the national German part of the patent-in-suit.

44. Although a Counterclaim for revocation must relate to the patent-in-suit in the infringement proceedings and can only be filed by a Defendant in those proceedings (cf. R. 25.1 RoP), it is otherwise independent of the infringement proceedings. Thus, the Claimant of a Counterclaim for revocation may seek revocation of the entire patent-in-suit, even if the Infringement action is based exclusively on a specific claim. The same applies to national parts of a European patent on which the Infringement action is not based, at least if the patent-in-suit is still in force.

SUBSTANTIVE SCOPE OF THE PATENT-IN-SUIT

45. The patent-in-suit relates to a method for producing glass sheets exhibiting desirable physical and chemical properties for use as substrates in flat panel displays, such as (Active Matrix) Liquid Crystal Displays, (AM)LCDs (cf. para [0001] of the description of the patent-in-suit).

46. According to the patent-in-suit, in prior art flat panel displays were broadly classified into two types: emissive or non-emissive. This latter category, to which LCDs belong, does not emit light itself but rather relies upon an external light source, with the display only serving as a light modulator (cf. para [0002]). The light source is placed behind the actual display panel which consists of two linear polarization filters which are oriented 90° to each other, two glass sheets and the liquid crystal (LC) layer which is comprised between the glass sheets. The lower glass sheet can be referred to as the active plate because it contains active thin film transistors (TFT) to which a certain voltage can be applied (cf. paras. [0003] and [0007]). The upper glass sheet is referred to as the color filter plate, because it has a color filter with red, blue, green, and black organic dyes for each pixel coated on it (cf. paras. [0003] and [0007]).

47. As is generally known, LCDs rely upon three inherent features of LC materials to modulate light. The first is the ability of LC materials to cause optical rotation of polarized light. Second is the dependence of such rotation on the mechanical orientation of the liquid crystal. And third is the ability of the liquid crystal to undergo mechanical orientation by the application of an external electric field (cf. para [0003]).

48. Light, upon entering the first polarization film of an LCD becomes linearly polarized. Traversing the liquid crystal cell, the polarization of this light is rotated 90° and is therefore allowed to exit through the second polarization film. Application of an electric field across the liquid crystal layer aligns the liquid crystal directors with the field, hereby interrupting its ability to rotate light. Linearly polarized light passing through this cell does not have its polarization rotated and hence is blocked by the second polarization film. Thus, in the simplest sense, the liquid crystal material becomes a light valve, whose ability to allow or block light transmission is controlled by the application of an electric field via the thin film transistors contained in the lower glass sheet (cf. para [0004]). (Only) Light that is rotated

passes through the color filter plate and then through the second polarization filter to create the picture that is shown on the screen.

49. According to the patent-in-suit, the above description pertains to the operation of a single pixel in an LCD. High information type displays require the assembly of several million of these pixels, which are referred to in the art as sub pixels, into a matrix format. One of the preferred ways to address sub pixels is by controlling the electric field with a thin film transistor located at each sub pixel, which forms the basis of AMLCD devices. The description stresses that the manufacturing of these displays is extremely complex, and the properties of the substrate glass are extremely important. The glass substrates used in the production of AMLCD devices need to have their physical dimensions tightly controlled (cf. paras. [0005] and [0006]).

50. The description of the patent-in-suit further states that the *downdraw process* and in particular the *fusion process*, as described in two U.S. patent specifications, U.S. 3,338,696 (Exhibit CC5) and U.S. 3,682,609 (Exhibit CC6), is one of the few manufacturing processes capable of delivering glass sheets which can be used as substrates in LCDs without requiring costly finishing operations following the forming process, such as lapping or polishing. However, the downdraw and, in particular, the fusion process, in turn, place rather severe restrictions on the glass properties and, in particular, require a high liquidus viscosity preferably greater than 10 k Pa·s (100,000 poises), more preferably, greater than 15 k Pa·s (150,000 poises), cf. para. [0006].

51. Furthermore, according to the description of the patent-in-suit, the glass sheets need to demonstrate both thermal stability and chemical durability, which imposes further requirements regarding the composition of the glass and the processing conditions. Considering that precise filtering and rotating of the light emitted by the external light source for each pixel and sub-pixel is required, it is essential to use glass substrates whose dimensions are independent of thermal conditions since otherwise the dimensions could vary (cf. paras. [0006] and [0007]). Chemical stability is essential in order to ensure that further manufacturing steps and especially that the semiconductor type processes applied to the active glass sheet (active plate) leave the glass sheets unchanged (cf. para. [0008]).

52. Moreover, the patent-in-suit describes that the glass sheets need to be essentially completely defect free in order to be used in display panels. Manufacturing defect free glass sheets, however, becomes more and more difficult with increased size of, for example, LCD-TVs (cf. para. [0013]).

53. One of the primary sources for defects are gaseous inclusions (seeds) resulting from entrapment of air in the molten glass which historically have been removed through the use of arsenic as a fining agent. Arsenic, however, is potentially hazardous and raises environmental and health issues as a result of the panel manufacturing process (cf. para. [0014]). Consequently, efforts have been made to replace arsenic with antimony which, however, is a less effective fining agent and also raises environmental and health concerns (cf. para. [0015]).

54. According to the patent-in-suit (cf. para. [0017]), it would therefore 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 without the use of arsenic and/or antimony as fining agents.

55. Against this background, the objective task of the patent-in-suit is to provide a method for manufacturing glass sheets that are, in particular, suitable for the use in (AM)LCDs without a need for post forming finishing operations and without using fining agents that potentially create environmental and health issues (see also: Decision CD Munich, para. 121).

56. As a solution, the patent-in-suit proposes in claim 1 a method for producing glass sheets, the features of which can be structured as follows, whereby the panel 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_2: 64.0-71.0 Al_2O_3: 9.0-12.0 B_2O_3: 7.0-12.0 MgO: 1.0-3.0 CaO: 6.0-11.5 SrO: 0-1.0 BaO: 0-0.1
1.2	and, on an oxide basis, has: a $\Sigma[RO]/[Al_2O_3]$ ratio greater than or equal to 1.0, where $[Al_2O_3]$ is the mole percent of Al_2O_3 and $\Sigma[RO]$ 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_2.

57. Some features require further explanation.

58. The average person skilled in the art, 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 (cf. Decision CD Munich, para. 22), will understand the features as follows:

Feature 1– "alkali free"

59. The skilled person understands that the feature *"alkali-free"* does not require the glass to be entirely free of alkali. During the production of the glass sheets in accordance with the claimed method, the glass is usually contaminated with alkali.

60. However, in order to avoid negative influences on the suitability of the glass panels for, e.g. the use in LCDs (such as diffusion of alkali ions from the glass into the silicon of the TFTs of the active plate), it is important that the alkali concentration in the glass is kept at a level that is sufficiently low. The patent-in-suit, being its own lexicon, therefore defines *"alkali-free glass"* as *"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_20, K_2O and Li_2O concentrations" (cf. para. [0062]).

61. Accordingly, alkali-free refers to alkali-metals according to Group I of the periodic table of elements. Alkaline-earth-metals according to Group II of the periodic table of elements and their oxides are not excluded by feature 1, as can also be seen from the context with features 1.1 and 1.2 (MgO, CaO, StrO and BaO), which explicitly foresee alkaline-earth-metals to be present.

Feature 1– "downdraw process"

62. Feature 1 further claims that the glass sheets are produced by a *downdraw process*.

63. 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 (cf. Decision CD Munich, para. 24).

64. The advantage of a downdraw process is that it is possible to produce glass sheets that are suitable for use in LCDs without requiring costly finishing operations following the forming process, such as lapping or polishing. Rather, the downdraw process and, in particular, the fusion downdraw process, leads to glass sheets whose surfaces are almost flawless and perfectly flat (cf. para. [0068]).

65. The patent-in-suit describes the *"fusion process"* (also known as the "overflow" process) as a possible example of a downdraw process with reference to the US-patents 3,338,696 and 3,682,609 (submitted as Exhibits CC5 and CC6; cf., paras. [0006] and [0033]). In the fusion process the molten glass is poured into a trough that is formed at the top of a wedge-shaped forming device until the molten glass flows over the edges of the trough and runs down the two sides of the wedge-shaped forming device. The two glass streams meet at the lower tip and the "fused" glass stream is pulled down from there in the air, forming the glass sheet.

66. Nevertheless, feature 1 is not limited to the fusion process and does not specify any mandatory conditions regarding the selected batch materials provided they are suitable for applying a downdraw process which leads to the properties of features 1.1 to 1.4 in the finished glass sheets. However, the skilled person understands that a downdraw process

(to which the claim is limited) requires a minimum liquidus viscosity (cf. para. [0055]). If the glass composition is not sufficiently viscous, it will not be suitable for a downdraw process in accordance with the claimed method. In particular, 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. Based on the information in the description of the patent-in-suit and the common general knowledge, the skilled person will therefore expect glass compositions having a liquidus viscosity greater than or equal to 100,000 poises to be suitable for downdraw (cf. Decision CD Munich, para. 26).

Feature 1.1 – glass components

67. Feature 1.1 specifies that the batch materials, i.e. the raw materials for producing the glass sheets, have to be selected, molten and fined – as known in the state of art – so that the final glass sheets comprise certain components in a specific concentration as defined by the ranges according to features 1.1, 1.2 and 1.4. The further technical implementation of the required steps is left to the discretion of the skilled person. The process features of "selecting, melting, and fining" in feature 1.1 precede the downdraw.

68. According to feature 1.1, the finished glass sheet must comprise silica (SiO_2), alumina (Al_2O_3), boric oxide (B_2O_3), magnesium oxide (MgO) and calcium oxide (CaO), while strontium oxide (SrO) and barium oxide (BaO) are optional, as their proportion in the final product may be zero mol percent (cf. para. [0043]). Further, feature 1.1. does not exclude the presence of other components, provided the requirements of features 1.3 and 1.4 are fulfilled (cf. para [0061]) and the composition is still suitable for applying a downdraw process (feature 1).

69. The ranges specified in feature 1.1 include the respective end points (cf. para. [0028]). The amounts are given in mole percent in the patent-in-suit. However, the skilled person knows that amounts given in mole percent can be converted based on the molecular weight of a component to weight percent (wt. %), and *vice versa* for a specific and defined glass composition, but not in abstract terms as the percentages depend on the exact amount of the elements being present and their specific molecular weight.

70. The description of the patent-in-suit explains in detail, why the claimed ranges of the above-mentioned chemicals have been chosen and how they, in particular, influence the

melting temperature and the liquidus viscosity in a way that they do not compromise a downdraw process, e.g. a fusion process (cf. paras. [0036], [0038], [0056], [0058]). Moreover, other advantages of the claimed ranges are described (cf. paras. [0033], [0043]). For further details, reference is made to the decision of the CD Munich (cf. para. 27).

71. Especially, according to the description, maintaining an $\Sigma[RO]/[Al_2O_3]$ ratio (feature 1.2, see below) and a MgO concentration as claimed makes the fining process without using As_2O_3 and Sb_2O_3 (feature 1.3, see below) easier to perform and more effective (cf. para. [0067]).

Feature 1.2. – "$\Sigma[RO]/[Al_2O_3]$ ratio"

72. Feature 1.2 claims a ratio greater than or equal to 1.0 of the sum of the mole percents of the alkaline earth oxides MgO, CaO, SrO and BaO, referred to as "Σ[RO]", in relation to the mole percent of Al_2O_3. It follows from feature 1.1 that MgO and CaO must always be present in the glass sheets and therefore always influence the claimed ratio, whereas SrO and BaO do not necessarily have to be present (cf. para [0060]).

73. This is consistent with the technical teaching of the patent-in-suit. According to the description, it has surprisingly been found out that the ratio claimed with feature 1.2 as well as the MgO concentration of the glass are critical to the performance of the glass and, in particular, are critical with regard to meltability and fining (cf. para [0044] et seqq.). The patent-in-suit explains (cf. para [0055]) that the effects of replacing CaO with MgO in the claimed amounts renders non-linear and therefore surprising and, in its effects, advantageous results for the properties of the melted glass composition, in particular for the high liquidus viscosities which are a prerequisite for precision sheet downdraw processes. Keeping a $\Sigma[RO]/[Al_2O_3]$ ratio greater than or equal to 1.00 improves fining, i.e. the removal of gaseous inclusions from the melted batch materials. This improvement allows for the use of more environmentally friendly fining packages [cf. para [0063]), i.e. the use of tin instead of arsenic and antimony (features 1.3 and 1.4).

74. Therefore, the effect of the claimed concentration of MgO (see feature 1.1) in combination with the claimed ratio of alkaline earth oxides to Al_2O_3 (see feature 1.2) leads to positive effects for the melting and fining process, thereby allowing sufficient removal of gaseous inclusions by fining without arsenic or antimony (see feature 1.3), but with the less effective fining agent tin (see feature 1.4) while still retaining a sufficient liquidus viscosity

that allows producing glass sheets by a downdraw process (see feature 1). Accordingly, from a technical point of view, the skilled person understands that the features of the claim are interdependent (cf. Decision CD Munich, para. 35).

Feature 1.3 – "using neither arsenic nor antimony"

75. Feature 1.3 claims that fining of the glass is performed purposely using neither arsenic (As) nor antimony (Sb).

76. Fining, as known in the state of art, is performed in order to limit defects which mainly occur in the form of gaseous inclusions (also known as "seeds") resulting from entrapment of air in the molten glass as batch materials are melted (cf. para. [0014]). This step requires the use of a fining agent which is added to the glass composition. Both arsenic and antimony are well-known and effective fining agents, but are also potentially hazardous and, hence, raise environmental and health concerns (cf. paras. [0064] and [0065]). Therefore, the claimed method is carried out without using arsenic or antimony as fining agents.

77. Even when neither arsenic nor antimony are used purposely (intentionally) as fining agents, as required by feature 1.3, the finished glass sheets can, however, still include residual amounts of arsenic and antimony due to contaminations caused by the batch material and/or the equipment that is used to melt the batch materials. Such contaminations will in general only lead to a very low concentration in the finished product. Accordingly, the patent-at-suit explains that when fining is performed without purposely using arsenic or antimony as fining agents, the finished glass will *typically* have at most 0.005 mole percent of either of the substances as a result of contaminants present in the batch materials and/or the equipment used to melt the batch materials (cf. paras [0064] and [0065]).

78. The addition of the word "typically" makes it clear to a skilled person that this value is not to be understood as a fixed value that has to be "read into" feature 1.3 as mandatory. Rather, the decisive question is, whether arsenic and antimony have been used intentionally or not. Accordingly, if neither arsenic nor antimony are used during fining, a method resulting in values (slightly) above 0.005 mole percent of either substance in the finished glass, e.g. caused either by the batch material and/or the equipment that is used

to melt the batch materials, is not excluded from the scope of claim 1 of the patent-in-suit.

79. Nevertheless, a skilled person will not interpret feature 1.3 as (also) covering the production of finished glasses by a purposive use of As and/or Sb in non-substantial amounts, in the sense that they may contain up to 0.05 mole percent of As_2O_3 and/or Sb_2O_3, but is rather interpreted as covering (only) the purposive non-use of arsenic and antimony (cf. Decision CD Munich, para. 56).

80. Moreover, the scope of feature 1.3 is not limited to AS_2O_3 and Sb_2O_3. Rather, feature 1. 3 relates to arsenic and antimony in general without specifying any particular oxide. This follows from the wording of claim 1 and the comparison with feature 1.2 wherein – in contrast – the composition of the glass sheets is limited to specific oxides. A similar restriction cannot be derived from feature 1.3. Accordingly, the purposive use of other arsenic or antimony compounds during fining, such as As_2O_5 or Sb_2O_5, is also excluded.

81. This assumption is supported by the fact that the description states that "arsenic" and "antimony" in general would cause environmental and health issues, and therefore, it would be desirable not to use them (without mentioning any specific arsenic and/or antimony compounds, cf. paras. [0014] and [0017]).

Feature 1.4. – “fining in the presence of tin”

82. Finally, feature 1.4 refers to the use of tin during fining, whereby the finished glass comprises at least 0.01 mole percent tin dioxide (SnO_2).

83. Provided that this requirement is met, the application of a suitable fining process, which may include other components (cf. para. [0067]), except arsenic or antimony (feature 1.3), is left to the discretion of a skilled person as long as it results in sufficient removal of gaseous inclusions from the glass before forming the glass (via a downdraw process, feature 1).

84. According to the description, the presence of SnO_2 in (AM)LCD glasses has not resulted in any known adverse effects in the use of these glasses in the manufacture of liquid crystal displays. SnO_2, however, can form crystalline defects in (AM)LCD glasses when used at

high concentrations. Accordingly, the concentration of SnO_2 in the finished glass is preferably less than or equal to 0.15 mole percent, to which claim 1 is not limited to (cf. para. [0066] and dependent claim 3).

COUNTERCLAIM FOR REVOCATION

85. The admissible (see supra paras 41–44) Counterclaim for revocation, being directed against the German and French part of the patent-in-suit, is unsuccessful.

86. The subject-matter of the patent-in-suit does not extend beyond the content of the application as originally filed and its parent application and it is disclosed in a manner sufficiently clear and complete for the invention to be carried out by a skilled person. Moreover, the subject-matter of patent-in-suit is novel and involves an inventive step in view of the prior art presented in the proceedings at hand.

Added matter

87. Contrary to Defendants' opinion, the subject-matter of the patent-in-suit does extend beyond the content of the original and earlier application as filed.

Legal framework

88. Pursuant to Art. 138(1)(c) EPC, a European patent may be revoked, if its subject-matter extends beyond the content of the application as filed or, if it was granted on a divisional application, extends beyond the content of the earlier application as filed.

89. In order to assess 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 see 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 (CoA, decision of 25 November 2025, UPC_CoA_528/2024, para. 54 – Amgen v Sanofi; order of 14 February 2025, UPC_CoA_382/2024, para. 52 – Abbott v Sibio). Accordingly, literal support is not required to comply with Art. 138(1)(c) EPC. Neither is it required that all features of the claim can be found in one paragraph or one example of the application (CoA, decision of 25 November 2025, UPC_CoA_528/2024, para. 90 – Amgen v Sanofi). 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 (Court of Appeal, ibidem, headnote no. 4).

90. If, as in the present case, the patent is a divisional application, these requirements apply to each earlier application (Art. 138(1)(c) EPC, Art. 76 EPC; cf. Court of Appeal, order of 14 February 2025, UPC_CoA_382/2024, para. 52 – Abbott v Sibio; decision of 2 October 2025, UPC_764/2024, headnotes and para. 65 et seqq. – expert v Viosys).

No added matter in the case at hand

91. Applying these principles, the subject-matter of claim 1 of the patent-in-suit does not extend beyond the content of the original application and the earlier application as filed. Since the content of CC2 and CC7 do not differ in any relevant respect, the same assessment regarding added matter compared to CC7 also applies to CC2.

92. Contrary to Defendants' assessment, even though CC7 does not literally disclose the combination of the features of claim 1 in one consecutive embodiment, its subject matter can be directly and unambiguously derived from the disclosure of CC7 as a whole. The panel fully agrees with the decision of the CD Munich in the parallel Revocation action (UPC_CFI_337/2025) and, in order to avoid repetition, refers to the relevant passages of that decision (cf. Decision CD Munich, paras. 43 to 60).

Sufficiency of disclosure

93. Moreover, the subject-matter of the patent-in-suit is disclosed in a manner sufficiently clear and complete for the invention to be carried out by a skilled person.

Legal framework

94. 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. 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. 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. The burden of presentation and proof lies with the party invoking invalidity of the patent (cf. Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, paras. 105 et seqq. – Amgen v Sanofi).

Sufficiency in the case at hand

95. Applying these principles, the claimed invention is sufficiently disclosed. Also in this regard, the panel fully agrees with the decision of the CD Munich and refers to the relevant passages of that decision (cf. Decision CD Munich, paras. 66 to 84).

96. The panel further emphasizes that, contrary to Defendants' opinion, the assessment of sufficiency differs from the assessment of whether a skilled person would arrive at an embodiment that falls within the scope of claim 1 of the patent-in-suit without undue burden in the context of inventive step. This is because a skilled person can take into account the teaching of the patent-in-suit with regard to sufficient disclosure, whereas this is not the case when assessing inventive step starting from a prior art document at the application date or priority date of the patent-in-suit.

Novelty

97. The subject matter of the patent-in-suit is also new in the view of the prior art documents presented in the proceedings.

Legal framework

98. The assessment of novelty pursuant to Art. 54 EPC requires an assessment of the entire content of the prior source of disclosure. It is decisive whether the subject-matter of the patent claim with all its features is directly and unambiguously disclosed in the prior single

source of disclosure (cf. Court of Appeal, order of 25 September 2024, UPC_CoA_182/2024, para. 123).

Novelty in the view of the WO 2006/115997 (WO'997/CC9)

99. The patent-in-suit is new over CC9 which is prior art under Art. 54(3) EPC and therefore (only) relevant when assessing novelty of the patent-in-suit (Art. 54(3) EPC, Art. 56 EPC).

100. Also in this regard, reference is made to the reasoning of the decision of the CD Munich (cf. Decision CD Munich, paras. 88 to 97).

Novelty in the view of the WO 02/098810 (WO'810/CC11)

101. The patent-in-suit is also new over CC11.

Subject matter of CC11

102. CC11, originally filed in German and submitted in English as a machine translation as Exhibit CC11a, relates to a method for low vacuum refining of alkali-free aluminoborosilicate glass melts, whereby freedom from alkali signifies a remaining alkali oxide of less than 2000 ppm [parts per million]).

103. The object of the invention is 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_2O_3 or Sb_2O_3 or without the use of refining agents at all (p. 3, third para.)

104. According to claim 1 of CC11 a glass is obtained from the glass melt process, which has a glass composition on oxide base (wt. %) as shown below, whereby the ranges can be converted into mol % according to Defendants (cf. CCfR TCL, para. 122) and compared to feature 1.1. of the patent-in-suit as follows, which is partially contested by Claimant (cf. SoD to the CCfR, p. 58 footnote 1):

Oxide	wt. %	mol %	claim 1 of the patent in suit (in mol %)
SiO_2	55-66	59-72	64.0-71.0
Al_2O_3	12-25	7-16	9.0-12.0
B_2O_3	1-11.5	1-12	7.0-12.0
MgO:	0-8	0-12	1.0-3.0
CaO:	0-10	0-11.5	6.0-11.5
SrO:	0-9	0-6	0-1.0
BaO	0-8	0-4	0-0.1
ZnO	0-2	0-2	not excluded
TiO_2	0-2	0-0.5	not excluded
ZrO_2	0-2	0-1	not excluded
SnO_2	0-2	0-1	at least 0.01
CeO_2	0-2	0-1	not excluded

105. Further, according to claim 15 of CC11, the glass is formed by a flat glass forming process (for example Down Draw, Up Draw, Fourcault, Floaten, Overflow Fusion etc.).

Novelty in the present case

No disclosure of feature 1.1 in conjunction with feature 1.2 - *$\Sigma[RO]/[Al_2O_3]$ ratio*

106. C011 does not directly and unambiguously disclose **feature 1.2,** i.e. the claimed ratio of MgO, CaO, SrO and BaO in relation to Al_2O_3, in conjunction with the glass composition according to **feature 1.1**.

107. As Defendants correctly assume, it is not necessary for the disclosure of feature 1.2 that the formula defined therein is explicitly mentioned in a prior art document. The subject matter of claim 1 is not the formula according to feature 1.2 as such, but any glass sheet in which the ratio of the oxides defined therein is actually present.

108. However, this specific subject matter is not disclosed if the required ratio is only randomly fulfilled when working within the ranges disclosed in a prior art document under specific non-obvious conditions. Rather, direct and unambiguous disclosure requires that the ratio according to feature 1.2 is inevitably fulfilled when working with the composition disclosed in CC11.

109. Applying these principles, CC11 does not directly and unambiguously disclose feature 1.2. CC11 does not provide an (exemplary) embodiment that exhibits the ratio claimed with feature 1.2. Rather, CC11 discloses exceedingly broad compositional ranges (claim 1 of CC11) without any indication on why a skilled person should work within specific parts of these ranges that would also lead to an $\Sigma[RO]/[Al_2O_3]$ ratio as claimed in feature 1.2 of the patent-in-suit. According to the above principles, the mere possibility that a skilled person could randomly fulfil this requirement when using a composition within the ranges set out by claim 1 of CC11, does not change this assumption.

110. This is particularly true since all alkaline earth oxides (MgO, CaO, SrO and BaO), and especially the two ingredients that are considered essential in the patent-in-suit (MgO and CaO), which therefore must always directly influence the claimed ratio according to feature 1.2, are optional according to claim 1 of CC11. Moreover, the maximum amounts of SrO and BaO disclosed in CC11, when converted into mol%, far exceed the upper threshold according to feature 1.1 of the patent-in-suit. Accordingly, CC11 does not directly and unambiguously disclose to choose a composition that must include MgO and CaO (feature 1.1) and leads to ratio according to feature 1.2.

111. Even though claim 1 of C11 refers to a "Σ[RO] of 7 to 19 in wt. %", which is not explicitly explained in CC11 as the sum of the alkaline earth oxides, this also does not directly and unambiguously disclose that (1) MgO and CaO must be used and (2) the ratio of the alkaline earth oxides to Al_2O_3 must be at least 1, both of which is required according to features 1.1. and 1.2 of the patent-in-suit.

112. To the contrary, as mentioned above, MgO and CaO are optional according to CC11 with no preference over SrO and/or BaO. Furthermore, according to claim 1 of CC11, the amount of Al_2O_3 is 12 to 25 in wt. %, without further specifying that the amount of Al_2O_3 must be kept low enough or the sum of the alkaline earth oxides (Σ[RO]) high enough to achieve a ratio ($\Sigma[RO]/Al_2O_3$) of at least 1. Accordingly, CC11 only refers to the sum of the alkaline earth oxides, provided that the feature 'Σ[RO] 7 to 19' according to claim 1 is to be understood in this way, without linking it to the amount of Al_2O_3.

113. This assessment is consistent with the decision of the CD Munich, to which additional reference is made (cf. Decision CD Munich, paras 98 to 107).

<u>No disclosure of feature 1.2 in conjunction with feature 1 (downdraw)</u>

114. The above applies all the more as CC11 does not provide the skilled person with any guidance on how to select a composition which has a ratio according to feature 1.2 and is also suitable for a downdraw forming process according to feature 1. Rather, the downdraw process is mentioned in claim 15 of CC11 alongside other conceivable forming methods without any preference.

115. Again, it would depend on mere coincidence whether the person skilled in the art – randomly and out of the huge number of possible compositions – picked a composition that has the claimed ratio and is suitable for a downdraw process. This cannot be considered a reproducible teaching that would allow a skilled person to reliably and repeatedly practice the particular method according to claim 1 of the patent-in-suit (cf. for case law of the Boards of Appeal: EPO, decision T 1457/09, 17-01-2014; decision T 1437/07, 26-10-2009; for German case law: Federal Court of Justice (Bundesgerichtshof, BGH), GRUR 2022, 1501 mn. 69 et seqq. – Datensendeleistung; GRUR 2021, 1043 mn. 40 et seqq. – Cerdioxid).

116. This assessment is in line with Defendants' own test report (Exhibit CC33, sample 3) according to which the liquidus viscosity of a *"composition calculated to fall under the scope"* of CC11 is (only) 84,107.50 poises, which is well below the threshold of 100,000 poises that a skilled person would consider suitable for downdraw.

Inventive step

117. Finally, the patent-in-suit does not lack an inventive step.

Legal framework

118. According to Art. 56 EPC, an invention shall be considered as involving an inventive step if, having regard to the state of art, it is not obvious to a person skilled in the art.

119. The suitable starting point for the assessment of inventive step is not limited to the closest prior art. Since there may be several ways to arrive at a conclusion, there may accordingly exist several starting points. The decisive point is rather whether such starting point constitutes a suitable starting point which the relevant person skilled in the art would take into account, if confronted with the problem to be solved (cf. Central Division Munich Section, decision of 16 July 2024, UPC_CFI_14/2023, para. 8.6; Central Division Paris, decision of 21 January 2025, UPC_CFI_311/2023, para. 57). In this regard, on a regular basis,

a solution as claimed is obvious, if, starting from a suitable starting point in the prior art, the skilled person would be motivated (i.e., have an incentive) to consider the solution and implement it as a next step (cf. Central Division Munich, decision of 16 July 2024, UPC_CFI_14/2023 para. 8.6; Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, Amgen v Sanofi; decision of 25 November 2025, UPC_CoA_464/2024, Meril v Edwards). For an inventive step to be present, it is not necessary to show improvement of the technical teaching as defined by the patent claims over the prior art. Inventive step may also be found if the patent claims disclose a non-obvious alternative to solutions known in the prior art (cf. Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, Amgen v Sanofi).

The objective problem of the invention

120. As stated above, 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 and that produces glass sheets exhibiting properties that make them suitable for use in (AMLCD) display applications when commercially manufactured (cf. Decision CD Munich, para. 122).

121. 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 (feature 1.1 and 1.2, also see claim construction above) which allows the fining to take place in the presence of SnO_2 instead of arsenic and antimony whilst providing the characteristics which makes the produced glass sheets suitable for the use in display applications (cf. Decision CD Munich, para. 123).

Inventive step, starting from US 2002/0082158A1 (US'158/ Exhibit CC19)

Claim 1 does not lack inventive step over CC19, which is a patent application filed by Claimant.

Subject matter of CC19

122. CC19 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]). The glass compositions are prepared by selecting and melting of oxides and include a fining step (cf. paras. [0029] and [0032]).

123. The glass suggested in CC19 consists essentially of the following compositions as calculated in mole percent on an oxide base (mole %): 65-75 SiO_2, 7-13 Al_2O_3, 5-15 B_2O_3, 0-3 MgO, 5-15 CaO, 0-5 SrO, and essentially free of BaO, which means that the glasses preferably contain less than about 0,1 mol % BaO. The glasses are also essentially free of alkali metal oxides, which means that the glasses preferably contain a total of less than about 0.1 mol % of alkali metal oxides. Additionally, these glasses may contain fining agents (such as the oxides of arsenic, antimony, cerium, tin, and/or the halides, chlorine/fluorine; cf. para. [0017]; see also para. [0029]: "*fining agents such as As_2O_3, Sb_2O_3, CeO_2, SnO_2, Cl, F, SO_2, etc. may also be present to aid in the removal of seeds from the glass.*").

124. Claimant provided the following table in its Defense to the CCfR (cf. page 63) which reflects the scope of CC19 correctly:

Oxide	CC19 broad ranges [mol %]	CC19 preferred [mol %]	Claim 1 [mol %]
SiO_2	65-75	67-73	64-71
Al_2O_3	7-13	8-11.5	9-12
B_2O_3	5-15	8-12	7-12
MgO	0-3	0-1	1-3
CaO	5-15	5.5-11	6-11.5
SrO	0-5	0-5	0-1
BaO	essentially free	essentially free	0-0.1

125. Furthermore, according to CC19, it has been discovered that the liquidus viscosity of the glass is strongly influenced by the ratio of the sum of alkaline earths, RO (R=Mg, Ca, Sr) to alumina on a mol % basis, or RO/Al_2O_3= ($MgO+CaO+SrO/Al_2O_3$). This ratio is referred to as RO/Al_2O_3, and should be held in the range 0.9 to 1.2. Most preferably, this range should be $0.92<RO/Al_2O_3<0.96$ to obtain the highest liquids viscosity (cf. paras [0016] and [0027]).

126. According to CC19, MgO is present in the glasses in an amount of 0-3 mol %, preferably 0-1 mol %. Increasing MgO decreases liquidus viscosity, and therefore, no more than 3

mol % MgO should be present in the glass. However, smaller amounts of MgO may be beneficial for reducing density (cf. para. [0025]).

127. Table 1 of CC19 records 32 exemplary glass compositions in terms of mole % (cf. para. [0032]) within the ranges disclosed on CC19 and one comparative example. Example 27 is a glass composition having the following components (in comparison to claim 1 of the patent-in-suit):

Oxide	amounts [mol %]	claim 1 [mol %]
SiO_2	68	64.0-71.0
Al_2O_3	10.5	9.0-12.0
B_2O_3	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_2O_3	0.3	-
SnO_2	0	at least 0.1

CC19 as a suitable starting point

128. CC19 as a whole relates to the same technical field as the patent-in-suit and tries to solve a comparable objective problem and is therefore a suitable starting point, which would be of interest to the skilled person working in the relevant field.

Inventive step in present case

Feature 1.3

129. Nevertheless, starting from CC19, the skilled person has at least no motivation/incentive to implement a composition according to **features 1.1, 1.2 and 1.4** of the patent-in-suit in conjunction with not using arsenic or antimony during fining (**feature 1.3**).

130. CC19 relates to use any suitable fining agent without pointing at any disadvantages or preferences (cf. paras. [0017] and [0029]). Even if a skilled person would have been aware of environmental and health issues regarding the use of arsenic or antimony as fining agents in glass production at the priority date of the patent-in-suit, and therefore, in general, would have been motivated not to use these fining agents, CC19 nevertheless does

not motivate a skilled person to use the specific glass composition according to the above-mentioned features of claim 1 of the patent-ins-suit without the use of As and/or Sb during fining.

131. The person skilled in the art cannot derive any pointer from the teaching of CC19 that As and Sb, first, can be replaced by SnO_2 in a technically meaningful manner at all and, secondly, that such a replacement could also work under the conditions set out in CC19 as mandatory. Rather, the only substitute for As and Sb presented in CC19 is cerium oxide (CeO_2; cf. Examples 22 to 25 of Table 1). Whenever SnO_2 is used, As and Sb are also used as fining agents. For this reason alone, CC19 does not provide a pointer for a skilled person to completely replace As and Sb with SnO_2 and still work with the compositions disclosed therein.

132. Moreover, the only exemplary embodiments disclosed in CC19 that have a RO/Al_2O_3 ratio of at least 1, as required by feature 1.2 of the patent-in-suit, do not the use tin at all (cf. examples 27, 29, 30 and 31 of CC19). Accordingly, CC19 also provides no pointer for a skilled person to replace As and Sb by SnO_2 while maintaining a ratio in accordance with feature 1.2 of the patent-in-suit. CC19 does not even suggest to use SnO_2 in such cases at all, let alone instead of As or Sb. Accordingly, even if the skilled person would start with the specific compositions presented as example 27, it would not be motivated to use tin as a fining agent instead of As and/or Sb.

133. Against this background, it is questionable whether a skilled person, starting from CC19, would consider other prior art documents (such as CC15 and CC17) that suggest to replace As an Sb through tin in the finning process. Even if this were the case, the skilled person would not have arrived at the claimed solution without an inventive step, i.e. in an obvious manner. In this regard, reference is made to the decision of the Central Division Munich (cf. paras. 135 to 136).

<u>Feature 1.1 - MgO</u>

134. Moreover, CC19 does not disclose that MgO must be included, let alone in the amount of 1-3 mol %.

135. According to CC19 the MgO amount is 0-3 mol% or, more preferably, 0-1 mol% MgO. Accordingly, Example 27 of CC19, on which Defendants specifically rely, does not include

MgO and exhibits the “most preferred” range according to CC19.

136. The skilled person would further notice that CC19 discloses adverse effects of MgO (useful for reducing density but an increasing amount decreases liquidus viscosity, which is essential for a downdraw process, cf. para. [0027]). Accordingly, only two out of 27 Examples contain an MgO amount within the range according to feature 1.1 of the patent-in-suit (example 8: 1.25 mol %; example 21: 1.1 mol%) – all other examples have an amount of MgO well below 1.0 mol %, including seven examples without MgO.

137. Against this background, a skilled person, starting with CC19 and, in particular, example 27, would not be motivated to include an amount at 1 mol % MgO, which is the upper threshold of the most preferred range disclosed in CC19, in the specific working examples that do not contain MgO. This applies all the more, as CC19 does not suggest that having 1-3 MgO % allows for fining without arsenic and antimony which is no subject of CC19 (cf. Decision CD Munich, para. 132).

138. Even if the skilled person would consider further prior art documents, these would not provide a motivation to add MgO either. Also in this respect, reference is made to the decision of the CD Munich (cf. para. 135 et seq. and para. 140).

Inventive step starting from JP 2004-189535A (JP’535/ Exhibit CC20/20a)

139. Furthermore, claim 1 of the patent-in-suit does not lack an inventive step starting from the Japanese Patent Application JP 2004-189535A (JP’535/Exhibit CC20). Defendants submitted a certified English translation of CC20 as Exhibit CC20a. The following quotations refer to the English translation.

Subject matter of CC20

140. CC20 relates to alkali-free glass substrates that do not contain alkali metal oxides.

141. According to the description of CC20, rectangular glass substrates have been widely used as substrates such as flat panel displays and sensors (cf. para. [0002]). Among other necessary (chemical) properties (cf. paras. [0004] and [0005]), the transmittance of glass substrates is extremely important for these devices, and it is desirable that glass substrates have high transmittance in the ultraviolet to visible range (cf. para. [0006]).

142. Fe_2O_3 is present in the state of Fe^{3+} or Fe^{2+} in such glasses, and in particular Fe^{3+} has an

absorption peak near 380 nm, reducing the transmittance in the ultraviolet and short wavelength side visible regions. There are concerns that the transmission rate will degrade the substrate's performance as a display and sensor (cf. para. [0010]). To completely eliminate Fe_2O_3 is not a realistic option due to high manufacturing costs (cf. para. [0011]).

143. Therefore, the object of CC20 is to provide an alkaline-free glass substrate that satisfies all requirements for using it in a display and sensor and has a high transmittance without increasing costs (cf. para. [0012]).

144. In the course of repeated experimentation to achieve this aim, it has been found out that the addition of SnO_2 to the glass yields the desired transmittance. Thus, the alkali-free glass substrate according to CC20 does not contain alkali metal oxides and is characterized by the fact that it contains 0.01 to 0.3 % SnO_2, 0 to 0.1 % As_2O_3, and 0 to 1.0 % Sb_2O_3 by mass %, and the content of Fe in the glass is 0.005 to 0.03 % by mass %, when converted to Fe_2O_3 (cf. paras. [0013] and [0014]). The Court notes that all other amounts in CC20, e.g. the amounts in the following paragraphs, are likewise expressed as mass percentage (see also the heading of the tables relating to the Examples).

145. The alkali-free glass substrate has a limit of 0.1% or less for As_2O_3 in the glass, and 0.01% to 0.3% of SnO_2 is added thereto. When 0.01 to 0.3 % SnO_2 is added to glass, the reaction $Sn^{2+}+2Fe^{3+}\rightarrow Sn^{4+}+2Fe^{2+}$ occurs, and it is believed that the valence of Fe changes, Fe^{2+} increases, and Fe^{3+} decreases, and the transmittance of the ultraviolet range and the short wavelength side of the visible range increases. If the SnO_2 content is less than 0.01%, the amount of Fe that changes valence decreases, and the transmittance in the ultraviolet range and the short-wavelength side in the visible range decreases, which is not desirable. On the other hand, a SnO_2 content greater than 0.3% is not desirable because SnO_2 crystals tend to precipitate. The preferred range for SnO_2 is 0.05 to 0.3% (cf. para. [0018]).

146. In addition, As_2O_3, which is widely used as a clarifying agent, has an absorption peak in the ultraviolet region and also inhibits SnO_2 from changing its valence to Fe^{2+}. Thus, the content of As_2O_3 is restricted to 0.1% or less. If the content of As_2O_3 is more than 0.1%, the transmittance in the ultraviolet range will decrease, which is undesirable. Preferably it is less than 0.05%. In alkaline-free glass, reducing the content of As_2O_3, which is used as a clarifying agent, makes it difficult to obtain a glass without bubbles, but because SnO_2,

which is added to increase the transmittance, also acts as a clarifying agent, and glass without bubbles can be obtained by combining Sb_2O_3 and Cl as appropriate. However, as Sb_2O_3 also has an absorption peak in the ultraviolet region similar to As_2O_3, its content should be controlled to below 1.0% (cf. para. [0019].

147. The specific composition of the glass substrate of CC20 can be determined as appropriate for each application, taking into account factors such as chemical resistance, thermal shrinkage, fusibility, moldability, and thermal expansion coefficient. Suitable compositions, by mass percentage, are 55-70% SiO_2, 12-20% Al_2O_3, 5-15% B_2O_3, 0-5% MgO, 0-12% CaO, 0-10% SrO, 0-10% BaO, 0-5% ZnO, 0-5% ZrO_2 and 0-0.5% Cl (cf. claim 3 and para. [0022]).

148. The reasons for limiting the glass composition in this way is set out in CC20 (cf. paras. [0023] to [0034]).

149. Referring to MgO, CC20 stresses that MgO is a component that improves the meltability of glass by reducing only high temperature viscosity without reducing the distortion point of the glass. The fusibility of glass can be improved when MgO content is 5% or less. The preferred range is 0-3%. Furthermore, as the MgO content increases, the loss of transparency in enstatite (in the glass) becomes more likely to occur. In addition, the resistance to buffered hydrofluoric acid is reduced and the glass substrate surface is eroded in the photo-etching process, and reactive organisms adhere to the glass substrate surface, making it easy for the glass substrate to become cloudy (cf. para. [0027]).

150. With regard to SrO the description states it is an ingredient that improves the chemical resistance and impermeability of glass. The foregoing effects can be obtained when the content is 10% or less. The preferred range is 0-7%. As the content of SrO increases, the density and coefficient of thermal expansion of the glass tend to increase and the fusibility tends to deteriorate (cf. para. [0030]).

151. Further, BaO, like SrO, is an ingredient that improves the chemical resistance and impermeability of glass. The foregoing effects can be obtained when the content is 10% or less. The preferred range is 0-5%. As the BaO content increases, the density of the glass and the coefficient of thermal expansion tend to increase, and its fusibility tends to deteriorate significantly (cf. para. [0032]).

152. Furthermore, by mixing and including alkali earth metal oxides such as MgO, CaO, SrO, and BaO, it is possible to improve the fusibility and anti-leakage properties of glass, but if the total amount of these components increases, the density of the glass also tends to increase, making it difficult to reduce the weight of the glass substrate. It is therefore desirable to keep the total amount of additives to less than 11% (cf. para. [0032]).

153. Methods of manufacturing the non-alkali glass substrates of the present invention are described as follows (cf. para. [0035] et. seq.):

154. First, the raw materials for the non-alkaline glass are selected while taking into consideration the amount of Fe contained as an impurity, and the raw materials are used to make a mixture that falls within the above-mentioned glass composition range. The raw materials thus prepared are then melted in a continuous melt furnace at a temperature of 1520 to 1680°C. After that, by forming molten glass into a sheet using methods such as the slot-die draw method (downdraw), overflow-die draw method, float method, and roll-out method can be used and the glass is then slowly cooled to obtain an alkali-free glass substrate (cf. para. [0036]).

155. The tables 1 to 4 (cf. paras. [0039] to [0042]) illustrate 20 embodiments with an oxide-composition within the range set forth above (cf. claims 1 and 3 and para. [0022]), including Example 15 defined by wt. % of each listed oxide, which can be converted for the specific composition to mol % as follows (in comparison to claim 1 of the patent-in-suit):

Oxide[2]	wt. %	mol %	claim 1
SiO_2	62.0	67.20	64.0-71.0
Al_2O_3	16.0	10.22	9.0-12.0
B_2O_3	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_2	0.1	0.04	at least 0.01
Sb_2O_3	0.1	0.02	-

156. Example 15 has a $\Sigma[RO]/[Al_2O_3]$ ratio of (rounded up) 1.20.

157. Moreover, Example 10 discloses a further embodiment of an alkali-free glass defined by wt. % of each listed oxide, which can be converted for the specific composition to mol % as follows (in comparison to claim 1 of the patent-in-suit):

Oxide	wt. %	mol %	claim 1
SiO_2	64.0	69.59	64.0-71.0
Al_2O_3	16.0	10.25	9.0-12.0
B_2O_3	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_2	0.2	0.09	at least 0.01
Cl	0.2	0.07	not excluded

158. Example 10 provides a $\Sigma[RO]/[Al_2O_3]$ ratio of 0.944.

CC20/Example 15 as a realistic starting point

159. It can be left open if the specific Example 15 is a realistic starting point, which is disputed by Claimant. Even if this were the case, claim 1 of the patent-in-suit does not lack an inventive step.

Inventive step in the present case

160. As Defendants concede, Example 15 does not disclose a composition according to feature 1.1 due to the use of too much BaO. Further, as also recognized by the Defendants, Example 15 of CC20 does not disclose a glass composition free from both, As_2O_3 and Sb_2O_3, as purposely used fining agents as required by feature 1.3.

161. Contrary to Defendants assessment, the claimed invention is not obvious starting from example 15 of CC20. A person skilled in the art would have not adapted Example 15 in a way that would fall under claim 1 of the patent-in-suit without inventive step.

162. The whole disclosure of CC20 does at least not prompt a skilled person to exclude Sb_2O_3 (**feature 1.3**) from fining in Example 15 in an obvious manner or in combination with other prior art documents.

Feature 1.3

163. Starting from Example 15 of CC20, there is no pointer in CC20 that would prompt the skilled person to avoid using Sb_2O_3 during fining in this example.

164. CC20 addresses disadvantages of As and Sb (only) in relation to the transmittance in the ultraviolet range, but nevertheless uses Sb in the embodiment according to example 15. This is in line with its general teaching. CC20 lists both As_2O_3 and Sb_2O_3 as suitable fining agents and explicitly states that without the use of As_2O_3 it is *"difficult to obtain a glass without bubbles"*. Considering problematic effects of As_2O_3 regarding transmittance, CC20 suggests to replace As_2O_3 with a combination of SnO_2, Sb_2O_3 and Cl. For Sb_2O_3, CC20 merely states that considering its absorption peak in the ultraviolet region, the content should be restricted to below 1.0 % (para. [0019]). CC20, accordingly, does not associate any negative effects for transmittance with Sb_2O_3 if the concentration is kept below the provided upper limit. The concentration of Sb_2O_3 in example 15 of CC20 is significantly below this upper limit.

165. Therefore, the skilled person would not exclude Sb_2O_3 from Example 15 in an obvious manner according to CC20's general teaching. It is true that CC20, in principle, would allow compositions without using arsenic and antimony (cf. claim 1 and 3, Example 10 below). But, at the same time, it suggests to use a combination of SnO_2 and Sb_2O_3, when no As is present as a fining agent, as long as Sb_2O_3 is kept under the threshold of 1.0 %. This is in line with the composition of Example 15, which, accordingly, does not provide any hint to avoid Sb_2O_3.

166. Nevertheless, even if it were assumed for the benefit of Defendants that the skilled person would generally be motivated to replace antimony as it was known to be hazardous, it would not arrive at the claimed invention without an inventive step as explained by the CD Munich (cf. Decision CD Munich, para. 148 et seqq.).

167. The same is true in Example 15 with regard to the amount of BaO which exceeds the upper threshold according to feature 1.1 of the patent-in-suit by more than 100 %. Also in this regard, reference is made to the decision of the CD Munich (cf. paras. 148 et seqq.).

CC20/Example 10 as a realistic starting point

168. Further, it can remain open whether the specific Example 10 of CC20 is a realistic starting point. Also starting from Example 10, the skilled person would not arrive at the teaching of claim 1 of the patent-in-suit without an inventive step.

Inventive step in the present case

169. As Defendants concede, Example 10 does not disclose **features 1.1** and **1.2** since no MgO is present in the glass and the calculated *ratio* of alkaline-earth-oxides to alumina is below 1.0.

170. CC20 does not provide a pointer to add, as argued by Defendants, at least 1 mole percent of MgO to the specific composition shown in Example 10 of CC20.

171. Certain advantages relating to meltability are disclosed in CC20 as well as several adverse effects concerning an increasing MgO amount with regard – *inter alia* – to transparency, which leads to a preferred range of 0-3 wt. % MgO. Therefore, the specific composition presented in Example 10 provides an MgO content (0 wt. %) within the preferred range of CC20 hereby avoiding any negative effects MgO might cause in a glass composition according to CC20.

172. A motivation to change this composition can therefore not be derived from Example 10. The same is true with regard to CC20's general teaching. An indication for a skilled person which concentration of MgO would work in the compositions that CC20 discloses can be derived from the specific examples that include MgO (Examples 12, 15, 18 and 20). Only Example 15 includes a concentration of MgO within the range as claimed in feature 1.1 of the patent-in-suit. It is not apparent, however, that this example would have actually shown improved properties that would have prompted the skilled person to consider adding MgO also to the composition of Example 10 in order to achieve further improvements. The Examples 1 to 20 are disclosed as equally suitable (cf. para. [0047]) for the claimed invention of CC20, while only four of them include MgO at all, three of them near the lower end of the preferred range.

173. Even if the skilled person would additionally consider further prior art documents, such as CC15 and/or CC19, it would not arrive at the claimed solution without inventive step.

In this respect, reference is made to the decision of the CD Munich (cf. Decision CD Munich, paras. 152 et seqq.).

4. Inventive step, starting from JP 2001-348247 A (JP'247/ Exhibit CC27/27a)

174. Finally, claim 1 of the patent-in-suit does not lack an inventive step over CC27. Defendants submitted an English machine translation thereof as Exhibit CC27a, the accuracy of which Claimant does not dispute. The following quotations refer to the English translation.

Subject matter of JP'247/CC27

175. CC27 relates to alkaline-free glasses which are suitable for substrates for flat displays and can be formed into a plate shape by a float method, a downdraw method, a press method, or the like, but is preferably formed by a float method, which is easy for mass production (cf. paras. [0001] and [0029]). The glass compositions are prepared by selecting and melting of oxides and include a fining step (cf. paras. [0030] and [0027]). In order to improve the clarification (i.e. fining) Fe_2O_3, SO_3, F, Cl, SnO_2, As_2O_3, Sb_2O_3 etc. may be contained in an amount of up to 5 mol % in total, but As_2O_3 and Sb_2O_3 should preferably be avoided for environmental reasons (cf. para. [0027]).

176. With respect to specific examples, Example 10 shows the following composition by mol % in comparison with claim 1 of the patent-in-suit:

Oxide	amounts [mol %]	claim 1 [mol %]
SiO_2	72.0	64.0-71.0
Al_2O_3	9.5	9.0-12.0
B_2O_3	7.0	7.0-12.0
MgO:	2.0	1.0-3.0
CaO:	9.0	6.0-11.5
Y_2O_3	0.5	presence not excluded
SrO:	0	0-1.0
BaO	0	0-0.1

177. The RO/Al_2O_3 ratio of Example 10 is (rounded up) 1.16.

Inventive step in the present case

178. Defendants concede that Example 10 of CC27 does not disclose that fining is processed with SnO_2 in the amount specified in feature 1.4. Further, the content of SiO_2 is 1 mol %

too high.

179. Starting from Example 10, a skilled person would at least have no motivation to include SnO_2 as a fining agent in the composition of the working Example 10, let alone in a way it would lead to the amount of the claimed concentration of at least 0.01 mol % in the finished glass (**feature 1.4**)

180. Accordingly, it can remain open, whether CC27 and the specific Example 10 are suitable starting points at all due to the preference of float methods, which do not fall within the scope of feature 1 (downdraw process).

181. At least, there is no indication that the composition of Example 10 would require an improvement of the clarity or formability of the glass. Example 10 of CC27 does not contain any fining agent since no concentration is provided and the sum of its components (varying amounts of oxides) adds up to 100 mol %. This is consistent with the overall teaching of CC27. SnO_2 – as well as other components that could be considered as fining agents and for other purposes – is effectively only mentioned as an optional component (cf. para. [0027]). Accordingly, para. [0029] of CC27 indicates that no fining was performed and no fining agent was needed and used for the compositions shown as working examples. Therefore, a skilled person would not have been motivated to additionally include a fining agent in Example 10, let alone to specifically select SnO_2 in a specific concentration leading to at least 0.01 mole % in the finished glass and, moreover, hereby containing the composition with the range claimed according to feature 1.1. This is all the more true, as none of the Examples of CC27 contains SnO_2.

182. Consequently, there is no pointer in CC27 towards fining in the presence of tin resulting in an amount of 0.01 mol % in the finished glass, let alone as part of a downdraw process according to feature 1.

183. Furthermore, even if the skilled person would amend Example 10 as claimed by Defendants, they did not present sufficient evidence that such a glass sheet could be produced by a downdraw process (**feature 1**). According to Defendants own test report, sample 8 of Exhibit CC33, which allegedly reproduces amended Example 10 of CC27 correctly, has a measured viscosity of (only) 71,065.46 poises, which a skilled person would not consider suitable for a downdraw process.

184. Even if a skilled person would consider further prior art documents, such as CC19 and CC15, it would not arrive at the claimed invention without inventive step (cf. Decision CD Munich, paras. 163 and 164).

Other (prior art) documents referred to by Defendants

185. None of the other prior art documents referred to by the Claimant (CC11, CC13, CC14 or CC16) in combination with any of the starting points discussed above lead to a different conclusion with regard to inventive step. Also in this regard, reference is made to the decision of the CD Munich (cf. paras. 165 to 170).

No relevance of the Chinese final appellate judgement (Exhibits 42/42a)

186. It can remain open whether Defendants' arguments regarding the Chinese final appellate judgement of 19 December 2025 and the conclusions drawn by Defendants in this respect are admissible under R. 9.2 RoP. Even if these arguments are taken into account, they do not question the above assessment of an inventive step.

187. First, according to Defendants' submission, Article 22.3 of the 2000-amended Patent Law of the People's Republic of China requires regarding inventive step (referred to as "creativity"):

Creativity means that, compared with the existing technologies, the invention possesses prominent substantive features and indicates remarkable advancement […].

No such requirements ("prominent substantive features"; "remarkable advancement") are applicable when assessing inventive step under the EPC.

188. Moreover, contrary to the flawed assessment in the Chinese final appellate decision, as explained above, the patent-in-suit clearly emphasises a technical relationship between the claimed ratio of $\Sigma[RO]/[Al_2O_3]$ (feature 1.2), the concentration of MgO (feature 1.1) and the fining step performed with tin instead of arsenic and antimony (features 1.3 and 1.4, cf. paras. [0044] et seqq.; [0067]). This interdependence and the associated technical improvement, which allows to use tin instead of arsenic and antimony as fining agent when applying a downdraw process, was not sufficiently contested by Defendants, as would have been necessary (cf. CoA, decision of 25 November 2025, UPC_CoA_464/2024 para. 130 and para. 144 – Meril v Edwards).

189. For this reason alone, the panel considers the Chinese final appellate decision unconvincing. The mere fact that the ranges according to claim 1 of the patent-in-suit may overlap partially with those in "Evidence 1" (a family document of CC19) presented in the Chinese proceedings as a prior art document, which, according to Defendants, did not disclose "at most" the exclusive use of non-toxic SnO_2 or the minimal/non-use of toxic As_2O_3 and Sb_2O_3, does not justify the assumption that a skilled person *would*, without any pointer, reasonably expect similar effects and work within a composition according to feature 1.1 of the patent-in-suit by using SnO_2 instead of arsenic or antimony.

No need to assess validity of dependent claims 2 and 3

190. A decision on whether the subject-matter of dependent patent claims 2 and 3 extends beyond the content of the original application (and/or the earlier application) as filed (added mater) or is invalid for other reasons is not necessary.

191. Defendants have no legal interest in the assessment of the dependent patent claims if, as in the present case, the Counterclaim for revocation is already unsuccessful with respect to the independent patent claim to which the dependent patent claims directly or indirectly refer back and which therefore has a scope of protection that also encompasses the dependent patent claims (cf. CoA, decision of 17 February 2026, UPC_CoA_302/2025, headnote 1 and para. 91 [regarding sufficiency] – Rematec v Europe Forestry).

192. Notwithstanding the above, the subject matter of dependent claims 2 and 3 does not extend beyond the content of the original application (and/or the earlier application) as filed (cf. decision of the CD Munich, paras. 61-65).

IMPLEMENTATION OF CLAIM 1 BY THE ATTACKED EMBODIMENTS

193. Based on the claim construction above, it is undisputed that LCD-TVs marketed by the Defendants' company in Germany – at least in the relevant past – contained LCD-panels including glass sheets from unlicenced suppliers that were obtained directly by using the method according to claim 1 of the patent-in-suit (Art. 25 (c) UPCA).

Subject matter of Claimant's infringement allegation

194. In its Statement of Claim, Claimant defined the subject of dispute as to be any glass sheets from unlicensed suppliers incorporated into consumer electronic devices, such as LCD-

TVs, that were produced in accordance with the method of claim 1 of the patent-in-suit.

195. After introducing this general subject in its Statement of Claim, referred to as "accused products", Claimant referred to one exemplary TV model *("TCL 32L5A")* marketed in Germany by Defendants and a test report relating to a (allegedly) comparable model marketed in the US by the group of Defendant to further specify the technical characteristics of such attacked glass sheets. However, the general allegation of infringement was and is not limited to this exemplary TV model. Rather, the test reports submitted by Claimant during the course of the proceedings and the properties of the glass sheets mentioned therein are to be understood as additional support for the abstract/general assertion that glass sheets included in Defendants' consumer electronic products, such as LCD-TVs, were supplied (in some cases) by unlicensed suppliers and comply with the features of claim 1 regardless of which specific model or device they are incorporated into (cf. a similar case: LD Mannheim, order dated June 5, 2025 – CFI 750/2024, GRUR-RS 2025, 12616, para. 9 et seqq. – Fingon v Samsung; see also: CoA, order of 14 February 2025, UPC_CoA_328/2024, headnotes and para. 158 – Abbot v Sibio; order of 6 March 2026, UPC_CoA_789/2025, headnote 2 and para. 60 – Dyson v Dreame; LD The Hague, order of 18 February 2026, UPC_CFI_616/2025, para. 10 – GSK v Moderna).

196. Consequently, the subject matter of the legal dispute, as defined by the prayers for relief and the corresponding factual submissions, is not limited to glass sheets included in certain (exemplary) TV models with certain chemical characteristics. Rather, it encompasses any glass sheets from unlicensed suppliers that were produced according to the method of claim 1 and, thus, exhibits all claimed features, regardless of which specific model or device they are incorporated into.

197. Nothing to the contrary can be inferred from the order of the Local Division Mannheim of 23 April 2025 (UPC_CFI_471/2023 – DISH v AYLO, p. 3). Even though Claimant mainly relies on a reproduction of the wording of claim 1 of the patent-in-suit in the request I. of the Statement of claim (injunctive relief), the attacked embodiments in the present case can be clearly identified from the requests and the reasoning of the SoC.

198. Due to the very specific composition of oxides of certain chemical elements claimed with claim 1 of the patent-in-suit, it is sufficient in the present case to characterise the attacked

embodiment as glass sheets, in particular as glass sheets incorporated in LCDs of electronic devices, with reference to the features of claim 1. Taking into account Claimant's further explanations on the subject of the proceedings, it is clear that all products marketed by Defendants in Germany, which contain glass sheets manufactured by a downdraw process and have properties within the claimed ranges according to claim 1 of the patent-in-suit, are part of the present infringement action. Moreover, it is clear from Claimant's further explanations that only glass sheets from unlicensed suppliers are part of the infringement action.

199. Finally, contrary to Defendants' assessment, the subject matter of the main proceedings cannot be distinguished from the subject matter of subsequent enforcement proceedings. The scope of subsequent enforcement proceedings relating to the operative part of a previous decision on the merits is limited to the subject matter of the main proceedings and cannot extend beyond it (cf. German national case law: Federal Court of Justice (BGH), WRP 2023, 589 paras. 11 et seqq.).

Claimant's allegations of infringement are undisputed by Defendants

200. As Defendants correctly assume, in the Infringement proceedings, the Claimant bears the onus to present facts that justify the legal remedies sought (see also: R. 355.2 RoP) and the burden of proof (Art. 54 UPCA) relating to the relevant facts. However, if Claimant presents sufficient facts, there is no need to proof them or present proof of them, if Defendant does not contest them. Consequently, R. 171.2 RoP stipulates that *"a statement of fact that is not specifically contested by any party shall be held to be true as between the parties".*

201. An allegation of infringement is conclusive and relevant if a claimant presents facts that, when considered alongside a legal principle, demonstrate that it is entitled to the right in question. The presented facts must be sufficiently specific so that their relevance can be assessed and the opposing party can comment on them and, if applicable, contest them in accordance with the duty of truthfulness.

202. Applying these principles to the present case, Defendants did not contest Claimant's general allegation of infringement that consumer electronic devices marketed by the group of Defendants in Germany (see below for the specific infringing acts of TCL Defendants),

such as LCD TVs, – at least in the relevant past – contained glass sheets that were manufactured by using the method of claim 1 of the patent-in-suit and supplied by unlicensed suppliers.

203. On the basis of the test results presented in the SoC, which, in Claimant's view, confirmed that TVs sold by affiliates of the Defendants in the United States contained glass sheets manufactured by an unlicensed supplier, namely *Irico*, Claimant has – based on sufficient facts – asserted and sufficiently substantiated that glass sheets with identical or comparable properties were also used in Germany since glass sheets from this supplier were not manufactured specifically for the US market. Even if one were to assess this differently, Claimant has in any case sufficiently substantiated its allegation of infringement in its Reply by relying on the test results of six TVs of the model *"TCL 32L5A"* marketed by TCL in Germany. Contrary to Defendants' opinion, the submissions in this regard are not late filed (R. 9.2 RoP). Rather, these further tests are a permissible response to Defendants' objections in their SoD.

204. Defendants did not dispute this allegation of infringement by Claimant in general terms, i.e. detached from specific TV/LCD panel models, suppliers and time periods. In their Rejoinder regarding the Infringement action of 6 October 2025, Defendants only state verbatim: *"All LCD-TVs currently produced by Defendants for the German market do not infringe the Patent-in-Suit. This will hold true in particular at the time of the oral hearing and when the Court issues its decision on the merits."*

205. No such general statement was made upon explicit question of the Presiding Judge in the oral hearing on 3 March 2026 for the time period since the grant of the patent-in-suit until at least January 2025. Accordingly, Claimants allegation of infringement remained undisputed, at least insofar as Defendants did not dispute the infringement of the patent-in-suit in the relevant past. As will be explained below, this is sufficient to (predominantly) justify the remedies sought by Claimant. In the present case, it is therefore not necessary to decide whether Defendants are *currently* infringing claim 1 of the patent-in-suit. […].

<u>Influence of the Rules of Procedure</u>

206. Against Defendants' opinion, nothing to the contrary can be inferred from R. 171.1, sentence one RoP according to which *"a party making a statement of fact that is contested or likely to be contested by the other party shall indicate the means of evidence to prove*

it".

207. If Claimant does not indicate sufficient evidence in its Statement of Claim, even though the requirements of R. 171.1, sentence one RoP are met, which may be the case if Claimant knows from an out-of-court exchange of arguments that Defendant is likely to contest the characteristics of the attacked embodiment, procedural consequences to the detriment of Claimant may arise, such as the non-admission of a subsequent indication of evidence pursuant to R. 9.2 RoP or the consequences according to R. 171.1, sentence two RoP.

208. First, however, the question must be answered as to whether an allegation of infringement must be proven at all. If Claimant's allegations remain uncontested (cf. R. 171.2 RoP), as in the present case (see above), no indication and assessment of evidence is required. Accordingly, in the present case, it can remain open, whether the evidence cited in the Statement of Claim meets the requirements of R. 171.1 RoP. The same applies to the requirements of R. 13.1 (l)-(i) RoP. Finally, as explained above with regard to the subject matter of the infringement proceedings, R. 263 RoP is not applicable in the present case, as Claimant has neither extended nor changed the subject matter of the dispute in comparison to the SoC during the proceedings.

INFRINGEMENT ACTS BY DEFENDANTS

Liability of Defendants 1 to 3

209. The asserted infringing acts by Defendants 1 to 3, as detailed in the Statement of Claim, are not sufficiently contested by these Defendants. In particular, they do not contest that they at least marketed TVs in Germany including glass sheets obtained directly by a method according to claim 1 of the patent-in-suit (Art. 25 (c) UPCA) that were supplied by unlicensed suppliers in the relevant past.

210. Insofar as these Defendants argue in this context again that Claimant *"has not sufficiently demonstrated that the glass sheets used in the LCD-TVs as offered infringe the patent in suit*", this is incorrect, as explained above.

211. Moreover, Defendant 2 only further argues that Claimant had failed to allege any specific act of infringement committed by Defendant 1. However, Defendant 2 did not, as would have been necessary, generally dispute that it acted on behalf of Defendant 1 and thus

committed direct acts of infringement. Against Defendant's 2 assumption, Claimant does not rely on the mere function of Defendant 2 as general partner of Defendant 1, but instead argued that Defendant 2 is in fact jointly responsible for importing and distributing TVs in Germany and involved in these activities, which remained uncontested.

No liability of Defendant 4

212. The Infringement action against Defendant 4 has to be dismissed.

213. Claimant asserts that Defendant 4 would control the operations of Defendant 3 and would therefore be liable for the infringing acts committed by Defendant 3. However, Claimant has not substantiated and – afterwards – proven this contested factual allegation.

Legal Framework

214. The Court of Appeal has ruled that an "infringer" within the meaning of Art. 63 UPCA in conjunction with Art. 25 UPCA is also someone, who does not himself carry out the acts referred to in Art. 25 UPCA, but to whom the acts of a third party are attributable because it is an instigator, accomplice or accessory. Who is an instigator, accomplice or accessory in this sense is determined on the basis of an autonomous interpretation of Article 63 UPCA and Article 25 UPCA (cf. CoA, decision of 3 October 2025, UPC_CoA_534/2024, headnote 3 and para. 180 et seqq. – Belkin/Philips). The mere status as a (financial) holding company does not suffice to conclude that the holding company is liable for infringing acts committed by its subsidiaries as an instigator, accomplice or accessor. Rather, as with any instigator, accomplice or accessor awareness of the illegality of the act of use is also required (UPC_CoA_534/2024, UPC_CoA_683/2024, UPC_CoA_19/2025, decision of 3 October 2025, paras. 190, 198 and 199 – Belkin v Philips). The holding company may be liable if its actions go beyond the typical role of shareholder/financial holding, for instance using the other companies to commit infringement, exercises decisive control over the specific business activities of the subsidiary that resulted in the infringement or having knowledge of the infringing activities and not taking possible and reasonable action to stop it (cf. LD Düsseldorf, order of 12 February 2026, UPC_CFI_723/2025, headnote 3 and para. 202).

No liability in the present case

215. Applying these principles, Defendant 4 is not liable in the present case. Claimant did not

present sufficient facts to support its allegation that Defendant 4 was able to exercise operational control over the manufacture of the infringing products by Defendant 3, despite being aware of Defendant's 3 infringing acts. This allegation has been contested by Defendant 4 in both the Statement of Defence (SoD TCL, para. 210) and the Rejoinder (Rejoinder TCL, para 36). Consequently, as a mere holding company, Defendant 4 is not liable for the infringing acts committed by Defendant 3.

LEGAL CONSEQUENCES

216. Defendants 1 to 2 undisputedly (see supra) – at least in the relevant past – marketed LCD-TVs containing the attacked glass sheets in the territory Germany, and Defendant 3 has produced them in its factory in the Poland and delivered them to Germany at least in the relevant past.

217. The established infringement acts predominantly justify Claimant's requests.

218. In particular, this infringement (Art. 25 (a) UPCA) justifies the injunctive relief (Art. 63 (1) UPCA), the corrective measures of recall, definite removal and destruction (Art. 64 (1), (2) (b), (d) and (e) UPCA), and the order to communicate information (Art. 67 (1) UPCA and Art. 68 (3) (a) (b) UPCA in conjunction with R. 191 sentence 1 alternative 2 RoP; cf. LD Mannheim, decision of 11 March 2025, UPC_CFI_159/2024, Hurom v NUC Europe, paras. 103, 121) as well as the declaration on damages (Art. 68 (1) UPCA), in particular in their respective territorial scope.

Injunctive Relief

Risk of further infringement

219. The risk of further infringement, which is based on undisputed previous infringing acts and justifies the injunction, is not refuted by Defendants statement in their Rejoinder regarding the Infringement action and repeated during the oral hearing, according to which *"all LCD-TVs currently produced by Defendants for the German market do not infringe the patent-in-suit"*.

220. As a general rule, the fact that a party has infringed the patent is sufficient to establish a risk of further infringement through other acts of use, including infringing acts, which it had not previously committed (cf. CoA, order of 6 March 2026, UPC_CoA_789/2025,

headnote 2 and para. 60 – Dyson v Dreame). Accordingly, an infringement of a patent leads to the factual presumption, based on experience, that the infringing act will be repeated. This presumption only does not apply or is only rebutted if it is undisputed or proven by the infringer that there are special circumstances which reliably indicate that there is no likelihood of repetition or that this likelihood has been eliminated. The requirements for this assessment are strict. The risk of repetition is in particular not eliminated by the mere cessation of the infringement or by a change in the market situation; nor is a mere undertaking in court proceedings to refrain from future infringements sufficient. Rather, as in the present case, the risk of repetition can, in general, only be eliminated by a cease-and-desist declaration with a contractual penalty clause (see also: LD Munich, decision dated 4 April 2025 – CFI 501/2023, GRUR-RS 2025, 6253 headnote 3 and para. 341 – Edwards Lifesciences v Meril).

221. Defendants do not assert any such exceptional circumstances. Therefore, only a cease-and-desist declaration with a penalty clause could have eliminated the risk of further infringements but such a declaration was not submitted by Defendants.

222. Accordingly, the injunction is to be granted. In this regard, it was not necessary to make a separate decision on Claimant's "especially if-request" concerning dependent claim 3 of the patent-in-suit. The dependent claim 3 merely constitutes an example of the actions already encompassed by the order in relation to independent claim 1.

No disproportionality of a permanent injunction

223. The injunction does not have to be restricted permanently or temporarily due to disproportionality.

Legal Framework

224. Since the court has discretion to grant the permanent injunction (Art. 63 (1) UPCA "may") the circumstances of the individual case can be taken into account, in particular whether an injunction would be disproportionate (Art. 42 UPCA, Art. 3 (2) Enforcement-Directive). However, since any restriction affects the patent owner's exclusive right pursuant to Art. 25 UPCA which, moreover, is granted for a limited time period only, such a restriction on the grounds of disproportionality has to be limited to exceptional cases where the interest of the infringer clearly outweighs the interest of the patent owner. In accordance with

general rules, the burden of demonstration and proof lies on the infringer relying on disproportionality. Any restriction must be limited to particularly exceptional cases of unjustified hardship, *i.e.*, to cases where the interest of the infringer clearly outweighs the interest of the patent owner (LD Mannheim, decision of 2 April 2025 – CFI 365/2023, GRUR-RS 2025, 5735, para. 130 – FUJIFILM v. Kodak).

No disproportionality in the present case

225. Applying these principles, the injunction – which will only be valid until 28 June 2026 – is not disproportional.

226. Defendants' submissions lack relevant facts which could support that a permanent injunction was disproportionate. The mere reference to the general public interest and Defendants' interest in a functioning market with competing offerors and reliable supply chains does not trump Claimant's patent rights, which by way of decision of the legislator reserve the infringing acts exclusively to him. Moreover, Defendants themselves assert that they can use LCD panels manufactured by Claimant or licensed suppliers, as they have done in the past, or that they can use alternative LCD panels which weren't produced in accordance with claim 1 of the patent-in-suit.

No restriction to certain TV-models/LCD-panel-models

227. Moreover, contrary to Defendants' opinion, no restrictions have to be included into the operative part of the decision to limit its scope to certain models or model designations of TV/LCD-panels.

228. Rather, the operative part of the decision, reflecting the subject matter of the infringement proceedings, refers to and is limited to any products which contain glass sheets that were produced by a method in accordance with claim 1 and supplied by unlicensed suppliers. No further specifications are required to clarify the ambit of the decision. The requirement to limit an injunction to the specific infringing acts which the infringer has committed cannot be derived from Art. 62(1) or Art. 25(a) UPCA. As a general rule, the fact that a party has infringed the patent is sufficient to establish a risk of further infringement through other acts of use, including infringing acts, which it had not previously committed (cf. CoA, order of 6 March 2026, UPC_CoA_789/2025, headnote 2 and para. 60 – Dyson v Dreame).

229. Thus, it is the responsibility of Defendants to make sure that they do not (again) market any infringing products in Germany, to communicate exhausting and comprehensive information about committed infringing acts and to conduct the corrective measures of recall, definite removal and destruction of such products. Therefore, the panel does not have to decide whether TVs with certain product designations must be excluded because they (allegedly) do (currently) not infringe the patent-in-suit.

230. Apart from that, the mere model/product designation is in any case not sufficient to exclude certain products from the scope of this decision. Only the (chemical) properties of the used glass sheets are relevant, not the designation of the product that includes these glass sheets. The (chemical) properties of the glass sheets may change and lead to an infringement of claim 1 of the patent-in-suit, even though the designation of the product remains unchanged (and *vice versa*).

231. Even Defendants argue (SoD TCL, paras. 88 and 89), *"that even within a single TV model (identified by its model number), a TV manufacturer may incorporate various LCD panel models (or even different versions of the same LCD panel model) from multiple LCD panel manufacturers over the course of the TV's production. Since LCD panels contain two glass sheets per panel, it is not uncommon for an LCD panel manufacturer to even use glass of different sources for each sheet within the same panel, depending on availability at the time of production. Therefore, no definitive conclusion can be drawn regarding the specific LCD panel used in production based solely on the TV model number*". Accordingly, it is not justified to exclude certain products solely on the basis of their designation/model number.

No restriction to certain suppliers

232. The same applies to Defendants' suppliers of LCD-panels or glass sheets. Also in this context, it is up to Defendants to comply with the operative part of this decisions. If marketed products contain glass sheets that have not been produced in accordance with the method of claim 1, they do not fall within the scope of this decision. The same applies to glass sheets supplied by Claimant or its licensees, as these glass sheets are also not part of the subject matter of the present dispute.

Request for Information

233. The requested information is necessary for calculating the damages and for assessing which damage calculation method should be used within the meaning of Art. 68 UPCA (cf. LD Mannheim, decision dated 22 November 2024, UPC_CFI_210/2023, GRUR-RS 2024, 32250, para. 178 et seqq. - Panasonic v Oppo).

234. The information about the origin and distribution channels serves to clarify the circumstances of the infringement and to enable further parties responsible to be held accountable and further infringements to be effectively stopped.

235. Providing information on the "*price paid* […] for the infringing products" (Request II.1.b) is equally proportionate and can at least be based on Art. 68(3) UPCA that, as set forth in the abovementioned decision of the LD Mannheim, includes a substantive justification for requesting information that the patent owner needs in order to verify the accuracy of the information and to obtain reliable facts for calculating the damages.

236. The information is to be provided structured by calendar month and by patent infringing product in electronic form, e.g. in form of, but not limited to, an Excel sheet. Structuring the data in this way allows Claimant to confirm whether the correct and/or complete data is included and serves to efficiently enforce the right to information, taking into account that an electronic list can be evaluated with the help of a computer which should be standard practice in professional accounting (cf. LD Mannheim, decision dated 22 November2024 – CFI 210/2023, GRUR-RS 2024, 32250, para. 178 – Panasonic v Oppo).

<u>Recall, removal and destruction</u>

237. The requests for recall, removal and destruction are also founded.

238. In order to effectively avoid further acts of infringement, the requests shall be granted on a regular basis. The burden of demonstration and proof of any circumstance justifying to refrain from such grant is for the infringer objecting to the grant of corrective measures, e.g. on grounds of disproportionality. Defendants' statements do not fulfil these requirements.

239. Especially, the circumstance that the products in question could be marketed in territories in which the patent-in-suit is not in force, does not justify to deny the request for destruction. As Claimant correctly assumes, such a (theoretical) possibility will be given in almost

all patent infringement cases. Recognition of such an “exception” would therefore devalue the patent rights in relation to the relevant market for which the patent is valid.

240. The recall is to be restricted to commercial recipients only, because private end users are not part of the channels of commerce (cf. Local Division Düsseldorf, decision of 3 July 2024, UPC CFI 7/2023, GRUR-RS 2024, 17732, para. 143). However, Claimant’s request takes this into account by restricting the requested recall to the channels of commerce.

241. Furthermore, the claimant of an infringement action may, in its requests as in the present case, specify the acts in details, which have to be done by a defendant in order to recall from the channel of commerce, definitely remove from the channel of commerce and destroy the infringing products, and specify the evidence to be produced in this regard (cf. Court of Appeal, order of 14 October 2025, UPC_CoA_699/2025, Kodak v Fujifilm, para. 44). However, the request for the unconditional submission of this evidence also to the court was not granted. Apart from subsequent enforcement proceedings, there is no legitimate reason for this.

Time period for fulfilling the granted requests

242. Considering the circumstances of the individual case, the panel sets the period for fulfilling the order to communicate information to six weeks, starting from the service of the respective enforcement notification on the Defendant concerned. Considering the extent of the information and the time period concerned, this time period seems to be sufficient and appropriate as Defendants already investigated into the different sources of the attacked embodiments and set out, which of them would not be infringing in their opinion. Therefore, a considerable amount of the workload was already accomplished during the main proceedings so that rendering the detailed information appears to be possible in the ordered time. The same applies to the fulfilment of the obligation to recall, definitely remove and destroy infringing products.

Applicable law before entry into force of the UPCA/”Grace Period”

243. With regard to acts committed before the entry into force of the UPCA, the parties did not bring up that substantive national German law, as far as applicable, would yield another result (cf. LD Mannheim, decisions of 11 March 2025, UPC_CFI_159/2024, UPC_CFI_162/2024, Hurom v NUC).

244. However, the infringer must generally be granted a "grace period" of one month following the publication of the grant of the patent (26 April 2023) in order to examine the facts of the case (content of the patent, use in own products, obtaining legal advice if necessary). Only after this period has expired culpable behaviour can be assumed. Accordingly, the requested declaration on damages and the related order to communicate information had to be limited to acts committed since 27 May 2023.

No publication of the decision

245. The request for publication of the decision pursuant to Art. 80 UPCA is unfounded (request VI.).

246. In addition to finding a patent infringement, an order pursuant to Art. 80 UPCA also requires the finding of a legitimate interest of the claimant in the requested publication of the decision at the defendant's expense. In this regard, all circumstances of the individual case must be considered, such as the scope and severity of the infringement, the public presentation of the conflict, the public's interest in information, and whether the publication of the decision can contribute to eliminating misconceptions in the market caused by the infringement or to deterring future infringements (cf. CoA, decision of 17 February 2026, UPC_CoA_302/2025, para. 126 – Rematec v Europe Forestry).

247. Applying these principles, Claimant's request to permit, at Defendants' expense, to announce and publish the decision at hand in whole or in part in public media, in particular on the internet, is to be dismissed. Claimant has not brought forward sufficient reasons as to why it requires the requested publication. As far as Claimant refers to the need to remind companies within the supply chain that they must obtain a license from Claimant and to inform consumers that certain manufacturers have ignored valid patents, as this information is able to influence their next purchase decision, the statement remains vague. Claimant does not convincingly explain why it is not sufficient that Claimant informs companies within the supply chain by referring to the publication of the decision at hand in the UPC register. Furthermore, the panel considers it unlikely that, in the case of a mass product such as LCD-TVs, a significant number of consumers would base their purchasing decision on the fact that certain manufacturers/distributors have infringed Claimant's patent rights or would even take notice of the publication of the present decision. The panel therefore exercise its discretion (Art. 80, 64 (1) UPCA) to not grant the request.

No interim award of damages/costs

248. Claimant bases its request for an interim award of damages primarily on its costs incurred for the infringement action (cf. SoC, p. 41; Reply, p. 143 et seq.). Contrary to Claimant's view, the legal basis for a request for an interim award of such costs is not Art. 68 UPCA and R. 119 RoP, but Art. 69(1) UPCA and R. 150(2) RoP (cf. CoA, decision of 25 November 2025, UPC_CoA_464/2024, para. 202 – Meril v Edwards). The request for interim awards on costs is dismissed. Claimant did not sufficiently substantiate why it needs an interim award on costs prior to the final and binding decision in the proceedings at hand in order to enforce its rights in the further course of the proceedings. Therefore, the panel exercises its discretion (Art. 69 (1) UPCA, R. 150(2) RoP) not to grant an interim award on costs.

PENALTY ORDER

249. The panel considers the granted amounts of the penalty order both sufficient to force the Defendants to comply with the orders, if necessary, and appropriate on these circumstances. In exercising its discretion (cf. R. 354.3 RoP), the panel refrains from providing a penalty sum for each infringing product with regard to the injunction. Rather, also in this regard, the penalty order refers to non-compliance per day (cf. CoA, order of 14 October 2025, UPC_CoA_699/2025, para. 34 – Kodak v Fujifilm). In this regard, it has to be taken into account that the amount cannot be raised for committed violation with retro-active effect (cf. CoA, ibidem, para.34 – Kodak v Fujifilm). It therefore must provide for a penalty sum that is also sufficient in cases in which the first violation is a severe one, e.g. a deliberate destruction of books and accounts so as to make rendering information impossible or the deliberate sale of large quantities of infringing products despite the cease-and-desist order.

250. According to the aforementioned order of the Court of Appeal, despite the fact that a specific daily penalty payment is determined, it is possible to deviate therefrom in favour of the party affected by the enforcement (cf. CoA, ibidem, para. 42 – Kodak v Fujifilm). Accordingly, in the case at hand, the panel refrains from prefixing the words *'up to'* to the respective penalty sums, even though it cannot discern any difference in substance. Factors relating to a specific violation, such as the number of infringing products sold per day and their selling price, may therefore be taken into account when determining a final penalty payment.

VALUE IN DISPUTE

251. After hearing the parties, the value in dispute for the Infringement action is set at 5.000.000 € and the value in dispute for the Counterclaim for revocation is set at 5.000.000 €, in accordance with the judge-rapporteur's order pursuant to R. 370.6, R. 104 (i) RoP of 16 February 2026.

252. Contrary to Defendants' opinion, the circumstance that the Infringement action has been withdrawn with respect to former Defendants 1 and 2 (Hisense) as well as to former Defendants 7 to 9 (LG-Electronics) does not justify to reduce the value of the dispute for the Infringement action. The value of the dispute, which is the basis for the determination of the court fees, has to be assessed when the respective action is filed (cf. R. 370.6 RoP). The value of dispute and the court fees incurred at this point of time do not change if in the course of the proceedings several earlier defendants are released due to a partial withdrawal of the Infringement action.

253. The fact that the remaining Defendants do not have to bear costs with regard to the withdrawn parts of the Infringement action must be taken into account when deciding on the allocation of the (recoverable) costs of the proceedings between the parties (see below).

COSTS

254. The decision on allocation of the (recoverable) costs with regard to both the infringement action and the counterclaim for revocation is based on Art. 69 (1), (2) UPCA, R. 118(5) RoP.

255. The allocation of cost to Claimant and Defendants 1 to 4, hereby taking into account the partial withdrawal of the Infringement action against former Defendants 1 and 2 and 7 to 9, corresponds to the degree of success of the parties. The dismissal of the request for publication and for interim award on costs and the temporal restriction (27 May 2023 instead of 26 April 2023) of requests II.1 and III. carry less weight and do not decisively influence the above allocation.

ENFORCEABILITY

256. When deciding on an enforcement security, the Court has discretion. When exercising its discretion, the Court has to take the circumstances of the individual case into account and

balance the interests of the parties concerned. In the case at hand, the Court exercises its discretion not to make the enforceability subject to the provision of an enforcement security on the instant facts.

257. Defendants did not present any facts or arguments as to why it appears appropriate to order an enforcement security. Moreover, it is not apparent that Claimant, as a market leader in the market segment of interest here, should not be able to pay for any damages that Defendants could incur in the event that the decision at hand is enforced and afterwards overturned by the Court of Appeal. Defendants did not bring forward any specific point as to why Claimant's funds should not be sufficient. Nor did Defendants substantiate that Claimant will be unwilling to fulfil an obligation to pay damages. Apart from that, no undue burden on enforcing damages is apparent.

DECISION:

I. Defendants 1 to 3 are ordered, to cease and desist from

offering, placing on the market, using or importing or storing for those purposes in Germany glass sheets, in particular as built into liquid crystal displays of electronic devices, obtained directly by 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_2: 64.0-71.0
  Al_2O_3: 9.0-12.0
  B_2O_3: 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 $\Sigma[RO]/[Al_2O_3]$ ratio greater than or equal to 1.0 where $[Al_2O_3]$ is the mole percent of Al_2O_3 and $\Sigma[RO]$ 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_2.

(direct infringement of claim 1)

II. The Defendants 1 to 3 are further ordered, within a period of six weeks after service of the notification within the meaning of R. 118.8 sentence 1 RoP and, if applicable, the certified translation,

1. to provide Claimant with information in electronic form, e.g. in the form of an Excel spreadsheet, on the extent to which the Defendants 1 to 3 have committed the acts referred to under I. since 27 May 2023, the information being provided for each month of a calendar year and the infringing products referred to under I. and specifying:

   a) the origin and distribution channels of the infringing products, including names and addresses of suppliers and other prior owners as well as of commercial customers and points of sale for which the infringing products where destined;

   b) the quantities produced, manufactured, delivered, received or ordered, as well as the price paid or received for the infringing products;

   c) the identity of any third person involved in the production or distribution of the infringing products, the number and dates of the products offered;

   d) the advertising carried out, broken down by advertising medium, its distribution, the distribution period and the distribution area; including evidence of these advertising activities; and

   e) the costs, broken down by individual cost factors and the profits achieved,

   whereas copies of the relevant purchase documents (namely invoices, alternatively delivery receipts) are to be submitted as proof of the information, whereas confidential details beyond the information identified above may be redacted;

2. to recall the infringing products referred to under I. and placed on the market since 26 April 2023 from the channels of commerce by requesting third parties that have been supplied with the infringing products to return the products to Defendants 1-3, pointing out that this Court has found that the products infringe EP 3 296 274, and to bindingly assure the third parties that Defendants 1-3 will reimburse the costs incurred, bear the packaging and transport costs incurred, reimburse the customs and storage costs associated with the return of the products and take back the products;

3. to remove the infringing products referred to under I. and placed on the market since 26 April 2023 from the channels of commerce definitively by informing third parties that are in the possession of the infringing products to return the products to Defendants 1-3, pointing out that this Court has found that the products infringe EP 3 296 274, and to cancel all orders relating to the products referred to under I.;

4. to destroy at their own expense the products referred to under I. in their direct and/or indirect possession and/or ownership;

   and to provide the Claimant, within the aforementioned period of six weeks from the service of the notification within the meaning of R. 118.8 sentence 1 RoP and, where applicable, the certified translation, with written proof of the action taken under II.2-4.

III. It is declared that the Defendants 1 to 3 have to compensate the Claimant for any damages incurred since 27 May 2023 or to be incurred in the future as a result of all past and future actions under I.

IV. In case of any violation of the orders under I.-III., the respective Defendant shall pay a penalty payment in the amount of

- of 100.000 € for each day of violation of the order I.,
- of 50.000 € for each day of violation of the order II. 2 to II. 4,
- of 5.000 € for each day of violation of the order II. 1.

V. In all other respects the Infringement action is dismissed.

VI. The Counterclaim for revocation is dismissed.

VII. Claimant has to bear 2/3 of the court fees, 2/3 of its own costs and the recoverable costs of Defendant 4 regarding the Infringement action. Defendants 1 to 3 have to bear their own costs, 1/3 of the court fees and 1/3 of the recoverable costs of Claimant regarding the Infringement action (UPC_CFI_819/2024).

VIII. Defendants have to bear the costs of the litigation with regard to the Counterclaim for revocation (UPC_CFI_414/2025).

IX. The value in dispute for the Infringement action and the Counterclaim of revocation is set at 5.000.000 € each.

X. The Orders I. and II. shall be enforceable only after the Claimant has notified the Court which part of the orders it intends to enforce, this notification has been served on the Defendant concerned and, if applicable, a certified translation of the orders in the official language of a Contracting Member State in which the enforcement shall take place has been provided by the Claimant and served on the Defendant concerned.

Delivered in Mannheim on 16 April 2026

NAMES AND SIGNATURES

Presiding judge Tochtermann	Peter Michael Dr. Tochtermann Digital unterschrieben von Peter Michael Dr. Tochtermann Datum: 2026.04.13 11:47:29 +02'00'
Legally qualified judge Sender	Tobias Sender Digital unterschrieben von Tobias Sender Datum: 2026.04.08 09:16:28 +02'00'
Legally qualified judge Rinkinen	Petri Rinkinen Allekirjoittaja Petri Olavi Rinkinen Päivämäärä: 2026.04.08 13:38:00 +03'00'
Technically qualified judge Goedeweeck	Rudi Auguste B Goedeweeck Digitally signed by Rudi Auguste B Goedeweeck Date: 2026.04.08 12:18:43 +02'00'
For the Sub-Registrar: Schick, Clerk LD Mannheim	HANNAH EMILIA SCHICK Digital unterschrieben von HANNAH EMILIA SCHICK Datum: 2026.04.13 11:51:48 +02'00'

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 the date of its notification (Art. 73(1) UPCA, R. 220.1(a), 224.1(a) RoP).

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

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