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**Datasheet for the decision
of 24 June 2025**

Case Number: T 2000/23 - 3.3.05

Application Number: 18727847.8

Publication Number: 3634919

IPC: C03C3/087, C03C10/14

Language of the proceedings: EN

Title of invention:

BETA-QUARTZ GLASS-CERAMICS WITH HIGH ZINC CONTENT

Patent Proprietor:

Eurokera

Opponent:

Schott AG

Headword:

BETA-QUARTZ GLASS-CERAMICS/Eurokera

Relevant legal provisions:

EPC Art. 56, 123(2), 84

RPBA 2020 Art. 13(2)

Keyword:

Inventive step - (no)

Amendments - intermediate generalisation

Claims - unclear characterization by parameters

Amendment after expiry of period in R. 100(2) EPC

communication - exceptional circumstances (no)

Decisions cited:

G 0001/24, T 0744/23, T 1638/21, T 1891/20, T 0118/20,
T 3030/19, T 0190/99, T 0939/92

Catchword:



Beschwerdekammern

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Case Number: T 2000/23 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 24 June 2025

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Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted on
24 October 2023 concerning maintenance of the
European Patent No. 3634919 in amended form.**

Composition of the Board:

Chairman

P. Guntz

Members:

J. Roider

T. Burkhardt

Summary of Facts and Submissions

- I. The appeal by the opponent (appellant) lies from the opposition division's interlocutory decision to maintain European patent EP 3 634 919 B1 on the basis of auxiliary request 1.
- II. The following document, which had already been cited in the opposition proceedings, is relevant here:
- D6 US 2014/0135201 A1
- III. The patent proprietor withdrew its appeal at the end of the oral proceedings. Therefore it did not further pursue its former main request, which is the rejection of the opposition. Consequently, the new main request is the request filed as auxiliary request 1. However, the decision uses the numbering of the requests as on file before the withdrawal of the appeal in order to maintain consistency.
- IV. After the oral proceedings, the patent proprietor, by letter of 4 July 2025, requested correction of the minutes of the oral proceedings before the board.

Moreover, the patent proprietor made the board aware of the fact that it had requested interpretation from English to French on 17 September 2024 but no such translation was provided during the oral proceedings. Only interpretation from German to French (and vice versa) was provided. The patent proprietor requested that this situation be reflected in the minutes.

In a communication dated 15 July 2025, the board

rejected these requests.

- V. Claim 1 of auxiliary request 1 as maintained by the opposition division reads as follows:

"1. A transparent glass-ceramic of lithium aluminosilicate type containing a solid solution of β -quartz as the main crystalline phase, the composition of which, free of arsenic oxide and antimony oxide, except for inevitable traces, expressed in percentages by weight of oxides, comprises:

64.5% to 66.5% of SiO_2 ;

19.0% to 20.6% of Al_2O_3 ;

3.0% to 3.6% of Li_2O ;

0 to 1% of MgO ;

1.7% to 3.4% of ZnO ;

2% to 3% of BaO ;

0 to 3% of SrO ;

0 to 1% of CaO ;

2% to 4% of TiO_2 ;

1% to 2% of ZrO_2 ;

0 to 1% of Na_2O ;

0 to 1% of K_2O ;

with $\text{Na}_2\text{O} + \text{K}_2\text{O} + \text{BaO} + \text{SrO} + \text{CaO} \leq 6\%$;

0.05% to 0.6% of SnO_2 as the single fining agent; and optionally up to 2% of at least one coloring agent."

- VI. Claims 1 of auxiliary requests 2, 3, 4 and 5 contain at least the following amendment to the feature "optionally up to 2% of at least one coloring agent" of claim 1 of auxiliary request 1:

"~~optionally up to 2% of at least one coloring agent.~~ the coloring agent being a combination of coloring agents having the following composition (% by weight of the overall composition)

V₂O₅ 0.01% to 0.2%
Fe₂O₃ 0.01% to 0.32%
Cr₂O₃ 0.01% to 0.04%"

VII. Claims 1 of auxiliary requests 6 and 7 contain at least the following amendment to the feature "optionally up to 2% of at least one coloring agent." of claim 1 of auxiliary request 1:

"~~optionally up to 2% of at least one as the~~ coloring agent, a combination of coloring agents having the following composition (% by weight of the overall composition)

V₂O₅ 0.01% to 0.2%
Fe₂O₃ 0.01% to 0.32%
Cr₂O₃ 0.01% to 0.04%

wherein for a thickness of 4 mm the glass-ceramic

- has an integrated transmission (TL)
less than 10%;

- while maintaining transmission:

at 625 nm (T_{625nm}) greater than 1;

at 950 nm (T_{950nm}), lying in the
range 50% to 75%; and

at 1600 nm (T_{1600nm}),

lying in the range 50% to 75%."

VIII. Claim 1 of auxiliary request 3a contains the following amendments after the feature "with Na₂O + K₂O + BaO + SrO + CaO ≤ 6%;" of claim 1 of auxiliary request 1:

"0.05% to 0.6% ~~optionally up to 2% of at least one~~ fining agent comprising SnO₂ as the single fining agent; and

~~optionally up to 2% of at least one as the~~ coloring agent-, a combination of coloring agents having the

following composition (% by weight of the overall composition)

V_2O_5 0.01% to 0.2%

Fe_2O_3 0.01% to 0.32%

Cr_2O_3 0.01% to 0.04%."

IX. The appellant (opponent) argued that auxiliary request 1 did not involve an inventive step starting from D6, claims 2, 3, 4 and 5 did not meet the requirements of Article 123(2) EPC, auxiliary request 3a was not to be admitted under Article 13(2) RPBA and the added features of auxiliary requests 6 and 7 were unclear (Article 84 EPC).

X. The respondent (patent proprietor) argued that auxiliary requests 1 to 7 met the requirements of the EPC.

The minutes of the oral proceedings had to be corrected.

XI. Substantive requests:

(a) The appellant (opponent) requested that the decision under appeal be set aside and that the European patent be revoked.

(b) The respondent (patent proprietor) requested that the appeal be dismissed, hence that the patent be maintained on the basis of auxiliary request 1 underlying the impugned decision, or in the alternative that the patent be maintained on the basis of one of auxiliary requests 2, 3, 3a, and 4 to 7; auxiliary requests 2 and 3 having been first submitted with the statement of grounds of appeal, auxiliary request 3a having been filed on 23 May

2025, and auxiliary requests 4 to 7 having been resubmitted with the statement of grounds of appeal; they correspond to auxiliary requests 2 and 3 filed on 13 July 2023 and auxiliary requests 4 and 5 filed on 8 September 2023, respectively.

Reasons for the Decision

1. On the possibility of issuing a decision

In the patent proprietor's letter of 4 July 2025, the board was made aware that the patent proprietor had also requested interpretation from English to French.

However, in error, no interpretation from English to French was provided during the oral proceedings. Nevertheless, the introduction, the order and some questions were conducted using the English language.

English is the procedural language of the case and all the patent proprietor's submissions at the appeal stage (with the exception of the request for corrections) were written in English. The quality of the patent proprietor's responses to questions in English also suggested that interpretation was not an issue.

During the oral proceedings, the patent proprietor did not object to the use of the English language. Since translation from German to French was available, the board could have exclusively used these languages had it been made aware of the error as soon as English was used during the Chairman's introduction of the case or as soon as the first question was asked not in French or in German.

Therefore the decision could have been taken on 24 June 2025 without any question of adjourning the proceedings.

Moreover, since the patent proprietor confirmed at the end of the proceedings that it had been able to discuss all relevant aspects of the case, it had deprived itself of an opportunity to have any remark of a member of the board repeated in French. Thus the board had to assume that the whole content of the oral proceedings had been well understood and sufficiently addressed by the patent proprietor.

Against this background, the Chairman closed the debate and announced the present decision.

2. Auxiliary request 1, inventive step, Article 56 EPC
- 2.1 The patent is directed to a transparent glass-ceramic of lithium aluminosilicate type (LAS) containing a solid solution of β -quartz as the main crystalline phase.
- 2.2 D6 was cited by the opponent as a possible starting point for an inventive-step objection.

D6 is directed to an LAS glass-ceramic and is therefore suitable for this purpose.

It is undisputed that the subject-matter of claim 1 differs from D6, example 9 only in the Al_2O_3 content (opponent's statement of grounds of appeal: marginal no. 22; patent proprietor's statement of grounds of appeal: page 30, last paragraph, in combination with page 15, first paragraph).

The board concurs with this assessment.

- 2.3 The problem the patent intends to solve is to limit devitrification phenomena (patent in suit: paragraph [0013], e.g. page 4, lines 49 to 50; patent proprietor's statement of grounds of appeal: page 15, second paragraph).
- 2.4 It is proposed to solve this problem by the features of claim 1, which differ from D6, example 9 in the Al_2O_3 content.

The patent proprietor emphasised that, according to D6, many components had an impact on the devitrification, which is undisputed. It referred in particular to the description of D6 describing the effects on devitrification of SiO_2 , Al_2O_3 , Li_2O , MgO , SnO_2 , ZrO_2 , ZnO , BaO and P_2O_5 (D6: paragraphs [0044]-[0046], [0052], [0057], [0062] and [0093]; patent proprietor's statement of grounds of appeal: page 15, third paragraph; opponent's statement of grounds of appeal: marginal no. 47).

The patent proprietor further argued that all the components were interdependent. Changing the content of one element implied that the content of other elements also had to be modified (patent proprietor's statement of grounds of appeal: page 16, fourth paragraph).

However, D6 consistently describes the effect of devitrification as undesirable (see above references cited by the patent proprietor). Therefore Example 9 of D6, one of the inventive examples of D6, also limits the devitrification phenomena.

Thus D6 provides a solution to the technical problem as

stated by the patent proprietor and the patent in suit.

There is no indication that the devitrification of the LAS according to claim 1 of auxiliary request 1 limits the devitrification phenomena to a yet-higher degree. The examples do not quantify the devitrification phenomena.

Indeed, the patent in suit cannot even show that the devitrification phenomena were more limited in the inventive examples than in the comparative ones.

The patent proprietor argued with reference to lines 28 and 29 on page 5 of the patent in suit that it was possible to infer the devitrification phenomena from the viscosity of the glass melt. A distinction between the inventive and comparative examples was therefore possible.

However, page 5, lines 28 to 29 of the patent in suit reads: *"They decrease the viscosity of the glass at high temperature, they facilitate dissolution of ZrO₂ and they limit devitrification into mullite, however they increase the CTE of glass-ceramics"*.

"They" refers to BaO, SrO, CaO, Na₂O and K₂O. This sentence also does not link the limitation of the devitrification to a low viscosity of the glass melt. It only discloses that the addition of BaO, SrO, CaO, Na₂O and K₂O has these effects.

In summary, D6 provides a solution to the technical problem as stated by the patent proprietor, and the patent in suit cannot show that the alleged effect can be observed to a higher degree in the patent in suit than in D6.

- 2.5 Therefore the technical problem must be reformulated to a less-ambitious problem, which is to provide an alternative LAS.
- 2.6 The proposed solution is obvious because D6 discloses that the Al_2O_3 content may be in the range of 20% to 23%, the upper limit ensuring limitation of the devitrification phenomena (D6: claim 1 and paragraph [0045]).
- 2.7 When providing an alternative, the skilled person would consider an Al_2O_3 content of 20%, the lower limit disclosed in D6, up to 20.6%, the upper limit according to claim 1 of the patent in suit, to be a reasonable alternative.
- 2.8 The patent proprietor argued that there were many alternative possibilities for limiting the devitrification phenomena. Decreasing the Al_2O_3 content could only be selected with hindsight.

However, when the objective technical problem lies in the provision of an alternative, no pointer or incentive is required. It is sufficient that the skilled person would have considered the claimed solution to be a reasonable alternative to the prior-art composition of D6, Example 9 (T 939/92, point 2.5.3; T 3030/19, point 4.3; T 1638/21, point 63).

3. Auxiliary requests 2, 3, 4 and 5, amendments, Article 123(2) EPC

According to the patent proprietor, the amendment originates from page 10, lines 16-21 of the application

as originally filed.

Page 10, lines 16 to 21 defines a closed composition for the coloring system. This is acknowledged by the patent proprietor because in its view this particular composition will necessarily yield the specific transmission data indicated in the context of this colouring system (patent proprietor's statement of grounds of appeal: page 32, last paragraph); this would not necessarily be the case if further compounds were present in the colouring system.

However, claim 1 does not exclude the presence of further coloring agents (as indicated by the expression "at least one coloring agent"). As correctly observed by the opponent (opponent's statement of grounds of appeal: marginal no. 81), claim 1 is open-ended up to a limit of 2% of coloring agents. The total allowable amount of coloring agents is therefore significantly higher than the combined maximum amount of V_2O_5 , Fe_2O_3 and Cr_2O_3 , leaving room for the presence of further components.

The patent proprietor argued with reference to T 190/99 that a patent claim must be read with a mind willing to understand.

However, a mind willing to understand must not be confused with a broad interpretation of a broad claim. Claim 1 requires at least one coloring agent. This coloring agent is a mixture of V_2O_5 , Fe_2O_3 and Cr_2O_3 . The wording of claim 1 is moreover clear in that more coloring agents than the specified coloring agent may be present.

There is nothing in claim 1 to suggest the restricted interpretation proposed by the patent proprietor, i.e. that the only coloring agent was the coloring agent as

specified in claim 1.

Notwithstanding the question of admission of auxiliary request 2, the requirements of Article 123(2) EPC are not met. Auxiliary requests 3, 4 and 5 contain the same amendment as auxiliary request 2. As acknowledged by the patent proprietor, the assessment under Article 123(2) EPC applies to them accordingly.

4. Auxiliary request 3a, admission, Article 13(2) RPBA

The patent proprietor argued that the objection under Article 123(2) EPC was raised only in the reply to the appeal, which was too late. The objection in the present form was moreover only raised by the board. The amendment was not complicated and solved all objections. The same amendment was already made in an auxiliary request filed in the proceedings before the opposition division, which was eventually not upheld.

According to Article 13(2) RPBA, any amendments to a party's appeal case shall in principle not be taken into account unless there are exceptional circumstances, which have been justified by cogent reasons.

There were no new or unforeseeable developments in the appeal proceedings.

In point 3.1 of the preliminary opinion, the board held that claim 1 does not exclude the presence of further coloring agents (as indicated by the expression "at least one coloring agent"), while page 10, lines 16 to 21 of the application as originally filed, which was indicated as forming the basis for the amendment,

discloses that the colouring system has to be of the closed composition included in claim 1 as an open composition.

This was not a new objection.

The opponent had already argued in marginal no. 81 of its statement of grounds of appeal that the skilled person would understand the ranges disclosed in connection with the colour components V_2O_5 , Fe_2O_3 and Cr_2O_3 on page 9 and 10 of the application as originally filed as an exhaustive list of permitted colour components, without any further colour components (up to 2%) being present. It also argued that claim 1 allowed for the presence of further coloring agents as long as the total amount did not exceed 2% (opponent's statement of grounds of appeal: marginal no. 79).

Therefore an amended claim accounting for this objection should have been filed in the reply to the opponent's appeal, at the latest.

Therefore auxiliary request 3a is not taken into account (Article 13(2) RPBA).

5. Auxiliary requests 6 and 7, clarity, Article 84 EPC

There is no generally accepted definition of the feature "integrated transmission (TL)". Furthermore, as it is a value obtained by integration, at least the integration boundaries need to be specified to obtain a meaningful value.

The patent proprietor argued that it was common in the art of glass ceramics to use a range of 380 to 780 nm

for visible light, as disclosed in paragraph [0047] of the patent in suit. When including this known definition of integrated transmission, claim 1 could no longer be considered concise. According to decision G 1/24, the description must be consulted anyway. Therefore there is no need to add further features for the purpose of clarity.

As correctly argued by the opponent, the feature "integrated transmission (TL)" does not imply a visible light spectrum, let alone the exact range of 380 to 780 nm. Therefore the limits of the feature "integrated transmission" are not clear. As also stated in G 1/24, marginal no. 20, the correct response to any unclarity in a claim is an amendment.

Hence the correct response to the objection to the feature "integrated transmission", added after grant of the patent, should have been an amendment to render it clear.

It is not convincing that a further range with respect to the feature objected to breached the requirement of conciseness, given that the claim already contains more than 20 different ranges.

The requirements of Article 84 EPC are not met for this reason alone.

6. Correction of the minutes

By letter of 4 July 2025, the patent proprietor requested correction of the minutes.

This request cannot be granted.

Minutes of oral proceedings shall contain, *inter alia*, the essentials of the oral proceedings and the relevant

statements of the parties (Rule 124(1) EPC).

According to the case law of the Boards of Appeal, these essentials of the oral proceedings or the relevant statements of the parties are to be determined with a view to what the board may have to decide on (in the order), such as requests to amend or set aside the contested decision, to dismiss the appeal, or to withdraw the appeal.

The minutes do not have to contain the complete arguments of the parties (see e.g. T 118/20, Reasons 2; T 1891/20, Reasons 2.2; T 744/23, Reasons 5.6, all with reference to the "travaux préparatoires" to Article 6(4) RPBA, which state: "... *arguments presented by the parties during the oral proceedings are generally not included in the minutes ...*" (OJ EPO 2020, Supplementary publication 2, 50)).

In the present case, the patent proprietor requested the inclusion of allegedly new technical questions by a board member which required several breaks in the oral proceedings for consultation and the answers thereto.

As apparent from the above case law, the technical questions by a board member and the patent proprietor's answer thereto are not necessarily essentials of the oral proceedings within the meaning of Rule 124(1) EPC. As far as the patent proprietor's answers were relevant to this decision, they are reflected herein.

The patent proprietor moreover requested that it be stated that no interpretation of English to French was provided despite a pending request.

As already assessed in point 1 of this decision, there

is no indication that the use of English did negatively affect the patent proprietor's defence. In any case, no corresponding objection was raised by the patent proprietor, so this topic is not relevant to the decision.

The request for the minutes to be corrected is dismissed.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



D. Grundner

P. Guntz

Decision electronically authenticated