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**Datasheet for the decision
of 6 May 2021**

Case Number: T 2171/17 - 3.3.06

Application Number: 03728677.0

Publication Number: 1501672

IPC: B32B17/10, C08K3/00, C08K3/26,
C08J5/18, C08L29/14, B29C47/00

Language of the proceedings: EN

Title of invention:

Interlayer composite structure for laminating glass with controlled diffusing properties at high transmission and a process for making same

Patent Proprietor:

Performance Materials NA, Inc.

Opponent:

SEKISUI CHEMICAL CO., LTD.

Headword:

Interlayer composition/PERFORMANCE MATERIALS

Relevant legal provisions:

EPC Art. 123(2)

Keyword:

Added matter (all requests) - (yes)

Decisions cited:

Catchword:



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Case Number: T 2171/17 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 6 May 2021

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
31 July 2017 concerning maintenance of the
European Patent No. 1501672 in amended form.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: L. Li Voti
J. Hoppe

Summary of Facts and Submissions

- I. The opponent's appeal is against the interlocutory decision of the Opposition Division to maintain European patent no. 1 501 672 in amended form on the basis of the granted claims and of an amended page 5 of the description.
- II. With the statement of grounds the appellant reiterated its objections under Articles 123, 83, 54 and 56 EPC.
- III. In its reply the patent proprietor (respondent) defended the patent in the version upheld by the opposition division and requested in the alternative that the patent be maintained as granted. Moreover, it filed several sets of amended claims as auxiliary requests 2 to 11.
- IV. Following the board's preliminary opinion, the respondent by letter dated 12 March 2021 withdrew the then pending auxiliary requests 1, 5 and 6 and filed new versions of the main and auxiliary requests 2 to 4 and 7 to 11.
- V. With further letters dated 2 and 23 April 2021 the appellant maintained its objections and filed annexes 1 to 4.
- VI. At the oral proceedings held on 6 May 2021, the parties' final requests were the following:

The appellant requested that the decision under appeal be set aside and that the patent be revoked.

The respondent requested that the appeal be dismissed and that the patent be maintained in amended form on the basis of the main request filed by letter dated 12 March 2021, or as an auxiliary measure on the basis of any of auxiliary requests 2 to 4 or 7 to 11, filed with the same letter.

VII. Claim 1 according to the **main request** reads as follows:

"1. An interlayer composition comprising polyvinylbutyral and particles of colorant having a particle size of from 2.5 to 10 microns, wherein the concentration of the colorant is 0.1 to less than 2.0 weight percent based on the total weight of the composition, and wherein the colorant is selected from the group consisting of: BaSO₄; MgSiO₃; MgSO₄; MgO; ZnO; ZnSO₄; Sb_xO_y wherein x is either 2 or 4 and y is from 3 to 6; TiO₂; Ca₃(PO₄)₂; CaSO₄; CaCO₃, or any mixture thereof."

Claim 1 according to **auxiliary request 2** differs therefrom by the addition of the term "plasticized", as put in evidence by the board: *"1. An interlayer composition comprising **plasticized** polyvinylbutyral..."*

Claim 1 according to **auxiliary request 3** differs from that of the main request by the following amendment put in evidence by the board: *"1. An interlayer composition comprising polyvinylbutyral, **a plasticizer** and particles of colorant..."*

Claim 1 according to **auxiliary request 4** differs from that of the main request by the following amendment put in evidence by the board: *"1. An interlayer composition comprising polyvinylbutyral, **a plasticizer, a surfactant** and particles of colorant..."*

Claim 1 according to **auxiliary request 7** differs from that of the main request insofar as the colorant is restricted to **CaCO₃**.

Claim 1 according to **auxiliary request 8** differs from that of auxiliary request 7 by the following further amendment: "*1. An interlayer composition comprising **plasticized** polyvinylbutyral...*"

Claim 1 according to **auxiliary request 9** differs from that of the main request in that the concentration of colorant is restricted to "0.1 to **1.8** weight percent based on the total weight of the composition".

Claim 1 according to **auxiliary request 10** differs from that of auxiliary request 9 in that the colorant is restricted to **CaCO₃**.

Claim 1 according to **auxiliary request 11** differs from that of auxiliary request 10 by the following further amendment: "*1. An interlayer composition comprising **plasticized** polyvinylbutyral...*"

Reasons for the Decision

Compliance with the requirements of Article 123(2) EPC

1. Main request - Claim 1
 - 1.1 Claim 1 of this request concerns an interlayer composition, i.e. a composition which is suitable for an interlayer.
 - 1.2 In claim 1 of the application as filed (reference is herein made to its version published as WO 03/093000 A1) the interlayer composition was in particular

characterised by the features "..., wherein the interlayer: (1) has a haze of from about 25 percent to about 90 percent, (2) allows at least about 60 percent of incident light to be transmitted through the interlayer, and (3) has clarity of at least 20%", and so the claim included a limitation as regards the optical properties of the interlayer for which the composition was suitable, which limitation is no longer present in claim 1 of the main request.

1.2.1 The respondent argued that the original description contained the following passages: "*The concentration of the colorant **should be chosen** such that the interlayer or laminate has a light transmission of at least 60%...*" (page 5, lines 28-30); "*Clarity of the interlayers of the present invention **should be** at least 20%*" (page 7, lines 1-2); "*In the interlayer composition of the present invention, the diffusive power, as measured by percent haze... **is preferably** in the range from about 25 percent to about 90 percent*" (page 7, lines 7-10), which gave evidence that the optical properties listed in original claim 1 were only preferred and not mandatory.

1.2.2 The board cannot agree with this argument since the same limitation as regards the optical properties of the interlayer was also present in the original independent claims 12 and 26 and in the **summary of the invention** (page 2, line 25 to page 3, line 9 of the description), thus disclosing these optical properties as **essential** features of the interlayer composition, glass laminate and process for producing a PVB sheet according to the invention.

This is further confirmed by the passage on page 6, lines 13-17 of the description, stating that the

critical factor of the invention is that the PVB sheet has high light transmission, with clarity (and thus haze) that gives the laminate of the present invention substantially the same or similar appearance as a sheet of etched or sandblasted glass, thus implying necessarily for the skilled person a limitation as regards the above mentioned optical properties.

1.2.3 It is thus manifestly clear from the original disclosure taken as a whole and even considering the apparently diverging isolated passages indicated by the respondent, that the optical properties of the interlayer were mandatory for the invention.

1.3 In the respondent's view the wording of original claim 1 was unclear since the characteristics of the interlayer and especially of its thickness (which is generally known as influencing the measured optical properties) were not defined. Therefore, the optical properties of the interlayer reported in claim 1 as filed were meaningless and had to be disregarded. Hence, it was allowable to remove these unclear characteristics without infringing Article 123(2) EPC.

1.3.1 In the board's view, even though the wording of original claim 1 did not specify some of the interlayer characteristics, such as its thickness, it nevertheless clearly limited the optical properties of the interlayer for which the interlayer composition was suitable and thus it also defined the compositions of the invention in function of the properties supposed to be obtained by said interlayer. It follows that compositions unable to provide an interlayer having such optical properties were thus **not part** of the subject-matter of original claim 1, but were now part of claim 1 of the main request. Therefore, the above

respondent's argument does not justify the deletion of said optical properties from the wording of the claim.

- 1.4 The respondent further argued that the citation of the optical properties in the claimed interlayer composition was superfluous since any such composition would provide the optical properties of original claim 1 in an interlayer formed therefrom.

As regards the compositions listed in table 1 (page 11 as filed), for example the composition C1 or of example 10, which have a colorant concentration and a particle size in accordance with claim 1 but do not show all the optical properties required in original claim 1 for the interlayer prepared therewith (which for example show a haze above 90%, i.e. outside the limits of original claim 1), the respondent submitted that a reduction of the interlayer thickness would necessarily bring about some improvement of all optical properties (for example a reduction of the haze) so that also such compositions would be suitable for preparing an interlayer having the optical properties of original claim 1.

Therefore, the deletion of the optical characteristics was also allowable for this reason.

- 1.4.1 The board notes that it is established jurisprudence (see Case Law of the Boards of Appeal of the EPO, 9th edition 2019, II.E.1.1) that any amendment to a claim can only be made within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of the documents as filed ("gold standard"). It should thus be evaluated if the skilled person would have derived directly and unambiguously from the original disclosure

that any composition with the characteristics of claim 1 of the main request would necessarily provide an interlayer having the optical properties recited in original claim 1.

- 1.4.2 In this respect it is not in dispute that the optical properties of the interlayer are influenced not only by the thickness of the interlayer but also by the particle size and concentration of the colorant contained therein, as shown in figures 1 to 6 of the application.

In particular, as stated in the original description (page 6, lines 32-36), for any given weight percent of colorant the smaller the colorant particles the less the clarity and greater the haze. Moreover, by increasing the colorant concentration (page 6, lines 3-4) haze may become too high and clarity too low.

However, the description does not contain any statement that any composition having a combination of particle size and concentration within the limits of claim 1 would provide the essential optical properties in an interlayer formed therefrom.

- 1.4.3 Therefore, even though a reduction of the interlayer thickness could possibly improve the optical properties of the interlayer formed for example with the above mentioned compositions of table 1, the skilled person would not derive directly and unambiguously from the application as filed that the required optical properties of the interlayer are a necessary consequence of a composition having **any possible combination** of colorant particle size and concentration encompassed by claim 1 of the main request and any possible combination with additional components as

included by the wording of the claim reading "An interlayer composition **comprising...**".

- 1.5 The board thus concludes that claim 1 of the main request, which no longer contains any limitation of the optical properties of the interlayer for which the interlayer composition is a suitable one, extends to compositions which are not able to provide an interlayer with the originally disclosed optical properties and thus extends beyond the content of the original disclosure.

Claim 1 of the main request thus does not comply with the requirements of Article 123(2) EPC.

2. Auxiliary requests

Since the subject-matter of claim 1 of all the auxiliary requests presently on file is not either limited to a composition suitable for an interlayer having the above discussed optical properties, all auxiliary requests contravene the requirements of Article 123(2) EPC for the same reasons mentioned above.

3. The board concludes that none of the respondent's requests is allowable and the appeal of the opponent is thus successful.

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:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated