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**Datasheet for the decision
of 15 November 2021**

Case Number: T 0073/18 - 3.3.06

Application Number: 06787491.7

Publication Number: 1919707

IPC: B32B27/32, B32B27/34, B32B27/08

Language of the proceedings: EN

Title of invention:
METHOD OF THERMOFORMING

Patent Proprietor:
Cryovac, Inc.

Opponent:
Wipak Walsrode GmbH & Co. KG

Headword:
Cryovac/Thermoforming

Relevant legal provisions:
EPC Art. 100 (a), 100 (b)

Keyword:
Grounds for opposition - insufficiency of disclosure (no) -
lack of patentability (no)

Decisions cited:

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0073/18 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 15 November 2021

Appellant: Wipak Walsrode GmbH & Co. KG
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 8 November 2017
rejecting the opposition filed against European
patent No. 1919707 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: S. Arrojo
R. Cramer

Summary of Facts and Submissions

I. This appeal was filed by the opponent (appellant) against the decision of the opposition division to reject the opposition against European patent No. 1 919 707, claim 1 thereof reading:

"A method of thermoforming comprising the steps of:

(1) providing a film comprising:

(i) a skin layer forming an outer surface of the film, wherein:

the skin layer has a melting point of at least 130°C and at most 150°C, preferably at most 145°C or at most 140°C; and

the skin layer comprises one or more propylene/ethylene copolymers; and

(ii) a first polyamide layer forming an interior layer of the film, wherein:

the first polyamide layer has a melting point of at least 125°C and at most 230°C; and

the first polyamide layer comprises one or more polyamides;

(iii) an intermediate layer between the skin layer and the first polyamide layer, preferably directly adjacent the skin layer, wherein the intermediate layer has a melting point of at least 105°C and at most 150°C, preferably at most 130°C or at most 120°C or at most 115°C; and

the intermediate layer comprises one or more propylene/ethylene copolymers;

(iv) a tie layer between the intermediate layer and the first polyamide layer, the tie layer comprising one or more tie polymers; and

(2) heating the film, preferably to a temperature of at least 45°C and at most 105°C; and

(3) forming the heated film onto a mold.".

- II. In the statement of grounds of appeal, the appellant requested to set aside the decision and to revoke the patent in its entirety because the subject-matter of the granted claims was insufficiently disclosed and was not inventive in view of US 6,582,828 B1 (G3) taken alone or in combination with WO 2004/009353 A2 (G4) or EP 0 686 497 A2 (G5).
- III. With its reply, the patentee (also respondent) submitted nine amended sets of claims as auxiliary requests 1 to 9 and requested to dismiss the appeal or, as an auxiliary measure, to maintain the patent on the basis of one of these auxiliary requests.
- IV. In response to the board's preliminary opinion that none of the grounds of opposition appeared to prejudice the maintenance of the patent as granted, the appellant announced that it would not participate in the oral proceedings. With a further letter dated 30 September 2021 it withdrew its request to hold oral proceedings.
- V. In view of the board's preliminary opinion that the appeal should be dismissed and of the appellant's withdrawal of the request to hold oral proceedings, the board is now in a position to issue a written decision without holding oral proceedings.
- VI. The final requests of the parties are the following:

The opponent and appellant requests to revoke the patent in its entirety.

The proprietor and respondent requests to dismiss the appeal or, as an auxiliary measure, to maintain the patent on the basis of one of auxiliary requests 1 to 9 filed with the reply to appeal on 31 July 2018.

Reasons for the Decision

1. Article 100(b)/83 EPC

The board has concluded that the opposition ground under Article 100(b) EPC does not prejudice the maintenance of the patent as granted for the following reasons:

- 1.1 The appellant argued that the invention was not sufficiently disclosed because the contested patent failed to provide all the necessary information to carry out the thermoforming process with a reasonable expectation of success. To support this argument, it submitted test report **G2** (filed as G2/1 and G2/2 on 12 July 2016), which disclosed a laminate falling within the scope of claim 1. The appellant indicated (page 5, par. 5-6 of the grounds of appeal) that in the tests performed with this laminate "within the specified temperature range of 50-100°C, it was not possible to obtain a flawless deep-drawing moulded product with the required dimensions. Instead, only faulty products with inadequate shaping and even bursting were obtained". Consequently, it was apparent that the thermoforming process defined in claim 1 could not be carried out throughout the entire scope of protection.
- 1.2 The board notes that the patent in suit includes eight examples (par. [0106]-[0119]), each relating to the thermoforming of a different laminate (i.e. including

layers with different compositions). The appellant's tests, on the other hand, concern a single laminate, and, most importantly, fail to provide a technical description of the alleged difficulties encountered when thermoforming the laminate. In particular, it is not indicated whether the thermoforming process could not be carried out at all, or whether it could be carried out yet with imperfect results. There is also no disclosure of the results obtained under each of the different tested conditions. Finally, no information is given (besides the vague reference to "bursting") as to the specific problems encountered in the thermoforming process and/or the flaws observed in the final product.

While under normal conditions the submission of the test report by the appellant could have shifted the burden of proof back to the respondent in the question of sufficiency of disclosure, the missing information appears to be decisive to assess the relevance of this evidence. For example, if the thermoforming process was as such possible, yet with imperfect results, the appellant's tests might not even justify an objection under Article 100(b)/83 EPC (i.e. sufficiency of disclosure does not require flawless results). Furthermore, since the alleged problems are not described, it cannot be assessed whether they are the result of an insufficient disclosure in the patent, or of other aspects which could be easily identified and solved by a person skilled in the art.

In the board's view, the vague or insufficient information in the appellant's submission should not be interpreted to its advantage, assuming that the underlying problems are caused by an insufficient disclosure of the invention in the patent in suit. Instead, following a balance of probabilities and in

view of the tests in the opposed patent, the board considers that the failed results with the lamination process in G2 might be the result of unappropriate thermoforming conditions (i.e. time, temperature and/or pressure), and/or of inadequate characteristics of the laminate (e.g. excessively small tie layers, as suggested by the respondent). Such issues would normally be solved by a person skilled in the art without undue burden, for example by adapting the thermoforming conditions or the laminate's characteristics to those proposed in one of the eight examples in the patent in suit.

The board therefore concludes that the opponent has not convincingly shown that a skilled person would find serious technical difficulties to carry out the thermoforming process of the patent. The claimed invention is therefore not considered to be insufficiently disclosed.

2. Main request - Article 100(a)/56 EPC

The board has concluded that the opposition ground under Article 100(a) EPC in connection with Article 56 EPC does not prejudice the maintenance of the patent as granted for the following reasons:

2.1 Closest prior art

2.1.1 The board agrees with the parties that document G3 represents the closest prior art, because it discloses (column 10, line 55 to column 11, line 13; figure 1; tables 1-2) a process for thermoforming a multilayered laminate comprising an intermediate polyamide layer 13 (PA-1, PA-2 or PA-3 in table 1) having a melting temperature within the claimed range (table 2). This

document further discloses a skin or outer layer 18 and an adjacent intermediate layer 17, both preferably comprising polyolefin or olefin copolymers (column 5, lines 23-25 and column 6, lines 1-2), as well as a tie layer 16 between the polyamide layer 13 and the intermediate layer 17 (figure 1).

2.1.2 Claim 1 differs from document G3 in that *"the skin layer has a melting point of at least 130°C and at most 150°C"* and *"comprises one or more propylene/ethylene copolymers"* and in that *"the intermediate layer has a melting point of at least 105°C and at most 150°C"* and *"comprises one or more propylene/ethylene copolymers"*.

2.2 Problem solved by the invention

2.2.1 According to the opposed patent (par [0003]), the problem solved is *"to provide an improved forming web capable of use with thermoforming equipment where a broad thermoforming temperature window is desired, while also maintaining good formability to the thermoforming mold within this broad thermoforming temperature window"*.

2.2.2 Examples 1 to 8 of the patent in suit disclose different films falling within the claimed range and having a broad thermoforming temperature window, in particular going from a minimum of 50°-57°C up to a maximum thermoforming temperature of 100°C.

2.2.3 In view of the teaching of these examples, the board concurs with the appellant (page 6, 6th par. of the grounds of appeal) that the problem underlying the invention is the provision of a process for thermoforming a film having a broad thermoforming temperature window.

2.3 Non-obviousness

2.3.1 Document G3 discloses (col. 5 lines 23-26) a list of olefins which can be used to form the outer layer 18 (corresponding to the "skin layer" of the invention), said list including i.a. ethylene/propylene copolymers (hereinafter referred to as "EPC").

2.3.2 The appellant argued that, in view of the indication in column 5, line 34 ff. of G3, the melting point of the outer layer 18 should be 5°C lower than that of the outer layer 10 (on the opposite side of the film) and that, since the EPC proposed for the outer layer 10 in table 1 had a melting point equal to or lower than 150°C, it would be obvious to select an EPC for the skin layer 18 having a melting point within the claimed range.

Since column 6, lines 1-9 of G3 indicated that layer 17 was made of polyolefins or olefin copolymers, it would be advantageous from a production point of view to use the same type of copolymer in layer 17 as in layers 10 or 18. Furthermore, column 6, line 1 ff. indicated that it was desired to configure layers 17 and 18 to exhibit sufficient adhesion to each other so that no adhesion promoting layer would be required. This represented a further hint for the skilled person to use the same type of copolymers in layers 17 and 18. In column 6, lines 1-7 it was also indicated that the thermoformability was positively affected when the melting point of layer 17 was more than 3°C lower than that of layer 18, which in view of the melting points of the EPC in table 1 would lead the skilled person to select a copolymer for layer 17 having a melting point falling within the claimed range.

The appellant further argued that it was known from document G4 (example 7 on pages 21-22) to thermoform a film including an intermediate EPC layer (PP-1) and a polyamide (PA6-A) layer. While not explicitly disclosed, it was evident in view of table 1 in G3 that an EPC having the density and ethylene content disclosed in G4 (see "PP-1" on page 23, lines 2-3) would also have a melting temperature falling within the claimed range.

Finally, it was also known from document G5 (Figure 5 and table V-A on pages 15-16) to thermoform a film including an intermediate EPC layer to improve the thermoformability of the film.

The solution proposed in claim 1 was therefore obvious in view of the cited prior art.

2.3.3 The board does not follow the opponent's argumentation for the following reasons:

- While document G3 contemplates the use of EPC for the outer layer 18, none of the exemplary embodiments disclosed in its table 2 includes an outer layer 18 comprising this material, so it is apparent that this alternative is not a preferred one.

- There is furthermore no indication in G3 that the intermediate layer 17 comprises EPC. In particular, in column 6, lines 1-2, it is merely indicated that this layer consists of polyolefins and olefin copolymers, and according to the examples of table 2 this layer consists of either LLDPE or LDPE (i.e. linear low density polyethylene or low density polyethylene). Therefore, even if the board followed opponent's argument that the skilled person would have an

incentive to use the same type of copolymers in layers 17 and 18, this would not lead to the selection of EPC but rather to the selection of LLDPE or LDPE for both layers (note that these copolymers are also included in the list of materials for layer 18 in column 5, lines 23-25 of G3).

- There is also no indication in G4 that using the film proposed in example 7 would solve the problem of providing a process with a broad thermoforming temperature window, so there is no incentive for the skilled person to consider the teachings of this document for solving the underlying technical problem. Furthermore, even if it were assumed that the skilled person would consider using the film in example 7 of G4, there would be no reason to incorporate only the intermediate EPC layer while omitting the other layers of this film, such as the skin layer (i.e. layer 9) consisting of propylene homopolymer (PP-2) and not of EPC as defined in claim 1.

- Similarly, while document G5 discloses the use of an intermediate EPC layer in a thermoforming process, there is no indication that this film would solve the problem of providing a process with a broad thermoforming temperature window. It is thus not apparent why the skilled person would consider this particular document for solving the underlying technical problem, let alone why the EPC layer should be considered in isolation from the other layers falling outside the scope of claim 1 such as the propylene homopolymer skin layer (layer 9 in table V-A).

The board therefore concludes that the subject-matter of claim 1 as granted is not rendered obvious by the

cited prior art document G3, taken alone or in combination with either G4 or G5.

2.4 The invention defined in claim 1 therefore meets the requirements of Article 56 EPC. The same conclusion applies to claims 2 to 16, which are dependent on claim 1 and therefore include all its features.

3. Since none of the grounds of opposition under Article 100 EPC prejudices the maintenance of the patent as granted, the opponent's appeal cannot succeed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated