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Datasheet for the decision of 16 November 2020

Case Number: T 0334/17 - 3.3.06

Application Number: 06004057.3

Publication Number: 1825998

IPC: B32B27/34, B32B27/30, B32B27/08, B65D65/40

Language of the proceedings: EN

Title of invention:
Gas-barrier shrink films and their use in deep-drawing applications

Patent Proprietor:
Cryovac, Inc.

Opponent:
Isarpatent

Headword:
Gas-barrier shring films/CRYOVAC

Relevant legal provisions:
EPC Art. 123(2), 83, 54(2), 56

Keyword:
Inventive step - (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
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Beschwerdekammern

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Case Number: T 0334/17 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 16 November 2020

Appellant: (Opponent)	Isarpatent Patent- und Rechtsanwälte Friedrichstrasse 31 80801 München (DE)
Representative:	Isarpatent Patent- und Rechtsanwälte Behnisch Barth Charles Hassa Peckmann & Partner mbB Friedrichstrasse 31 80801 München (DE)
Respondent: (Patent Proprietor)	Cryovac, Inc. 100 Rogers Bridge Road Duncan, SC 29334 (US)
Representative:	Uexküll & Stolberg Partnerschaft von Patent- und Rechtsanwälten mbB Beselerstraße 4 22607 Hamburg (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 7 December 2016 concerning maintenance of the European Patent No. 1825998 in amended form.**

Composition of the Board:

Chairman	J.-M. Schwaller
Members:	R. Elsässer
	O. Loizou

Summary of Facts and Submissions

I. The opponent (hereinafter "the appellant") appealed the decision of the opposition division maintaining the patent in amended form on the based of the second auxiliary request then on file.

II. With its grounds of appeal, the appellant argued that the invention as defined in claim 7 was not sufficiently disclosed (Article 83 EPC), that its claims 5 and 6 infringed Article 123(2) EPC, and that the subject-matter of its claim 1 was inter alia rendered obvious by D6 (EP 1384576 A1), with its example 3 being the closest state of the art to the claimed invention, and therefore did not meet the requirements of Article 56 EPC.

III. With its reply of 6 September 2017, the respondent submitted three sets of amended claims as first (set C), second (set D) and third auxiliary request (set E).

IV. In a further submission, the appellant requested that these auxiliary requests not be admitted into the proceedings. Further it argued that the subject-matter of claim 1 of these auxiliary requests lacked an inventive step over D6 (in particular its example 3), and that the subject-matter of claim 5 of the second and third auxiliary requests extended beyond the original disclosure. With its submission, it also filed US 6 713 545 B (D13) as evidence that the polymer Styrolux 684D disclosed in D6 comprised a major proportion of styrene.

V. At the oral proceedings, which took place on 16 November 2020, the proprietor withdrew the main,

first and second auxiliary requests so that the third auxiliary request became the new main (and sole) request.

VI. Claim 1 thereof reads as follows:

"*1. A multi-layer, gas-barrier, biaxially oriented heat-shrinkable film, comprising:*
(a) a first outer heat-sealable layer
(b) an inner gas-barrier layer, comprising at least one gas-barrier resin selected from vinylidene chloride copolymers (PVDC), ethylene-vinyl alcohol copolymers (EVOH), polyamides and acrylonitrile-based copolymers, and
(c) a second outer abuse-resistant layer
said film being characterized in that it contains at least 28 % by weight of polystyrene polymer, which is present in the second outer abuse-resistant layer (c) and/or in one or more inner layers positioned between the first outer heat-sealable layer (a) and the inner gas-barrier layer (b) and/or one or more inner layers positioned between the gas- barrier layer (b) and the second outer abuse layer (c),
wherein at least 50 wt.% of the total amount of polystyrene polymer is in the form of styrene-butadiene block copolymer, and the styrene-butadiene block copolymer comprises a major portion of styrene component, based on the weight of the entire block copolymer."

VII. The final requests of the parties were as follows:

The appellant requested that the decision under appeal be set aside and the patent be revoked. Procedurally it also requested that the new main request not be

admitted into the proceedings.

The respondent requested that the patent be maintained in amended form on the basis of the main request, filed as auxiliary request 3 (claim set E) with letter of 6 September 2017.

Reasons for the Decision

1. Admissibility of the main request (claim set E)

The Board has decided to exercise its discretion pursuant to Article 12(4) RPBA 2007 to admit into the proceedings the claims of this request because they were filed with the respondent's reply to the grounds of appeal. The Board further notes that, even if this set of claims had been filed during the opposition proceedings, it would not have been dealt with in the decision since the patent was maintained based on a higher ranking request. Moreover, vis-à-vis claim 1 as maintained by the opposition division, claim 1 has been limited with a feature taken from a granted claim against which no objection under Art. 100(c) EPC had been raised, so that the amendment to this claim does not give rise to any issues under Article 123(2) or 84 EPC.

2. Allowability of the amendments

2.1 Concerning claim 5, that the appellant contested under this Article, the board held in its preliminary opinion that its subject-matter did not extend beyond the original disclosure, and so met the requirements of Article 123(2) EPC. As no counter arguments were presented by the appellant, the board has no reason to deviate from said opinion, namely that its subject-

matter was supported by page 11, lines 22 to 26 as filed, which discloses that EVOH is one of the preferred resins of the gas barrier layer, and examples 18 and 19 as filed, which specifically make use of this material for the gas barrier layer.

2.2 Claim 6, originally objected to either, having been amended in accordance to page 12, line 17 to 21 as filed, it meets the requirements of Article 123(2) EPC either.

2.3 As no objections against the other claims had been raised, the Board is satisfied that they meet the requirements of Article 123(2) as follows:

- The subject-matter of claim 1 finds its support in claims 1, 3 and 4; page 7, line 24 to page 8, line 2; page 11, line 22 to 24 and page 8, line 15 to 19 as filed;
- Dependent claims 2 to 4 and 7 to 10 are supported by claims 4 to 6 and 7 to 10 as filed.

3. Sufficiency of disclosure of the invention - claim 7

In its preliminary opinion, the board held the invention as defined in claim 7 - the sole claim objected to by the appellant - to be sufficiently disclosed, because its argument that the missing indication of a method for measuring the density of polyethylene would prevent the skilled person from reproducing the invention is not acceptable, since the skilled person only needs to select from the list of polymers recited in claim 7 a heat-sealable polymer having a density as defined therein. As no counter arguments were presented, and the appellant having not provided any evidence which would suggest, let alone

prove that such polymers are not readily available, the board concludes that the requirements of Article 83 EC are met.

4. Novelty

The board came to the conclusion that the claims of the main request meet the requirements of Article 54(1) EPC for the following reasons.

4.1 In its example 3, D6 discloses a film which
i) is neither oriented nor heat-shrinkable
ii) nor comprises a polystyrene in which at least 50 wt.% are in the form of a styrene-butadiene block copolymer comprising a major portion of styrene component, based on the weight of the entire block copolymer.

The film of example 3 is produced by hot-blowing (par. 0080), i.e a method which does not lead to oriented and heat-shrinkable films. It is correct that par. 0057 of D6 discloses in general terms that the films of D6 may be oriented and rendered heat-shrinkable but this option is explicitly described as less preferred. Furthermore it is not disclosed in combination with the manufacture of the film laminate of example 3. Feature i) is therefore not directly and unambiguously disclosed in combination with the other features in D6

The same conclusion applies to distinguishing feature ii), as claim 1 at issue requires not only that the styrene-butadiene block copolymer comprises a major portion of styrene but it must also represent more than 50 wt.% of the total amount of polystyrene polymer in the film.

There is however no evidence on file that the film of example 3 in D6 meets this condition. Much more, paragraph 0081 of D6 discloses that said film comprises two different styrene-butadiene block copolymers, namely Styrolux 684D and Orevac 16910. Although D13 (col. 3, line 35 - 38) discloses that Styrolux 684D has a styrene content of 74 %, based on the thickness of the respective layers, Styrolux 684D thus represents only about 45 wt.% of the total amount of polystyrene polymer. As to the styrene content of Orevac 16910, this is not known, at least from the documents currently on file. It follows that the film of example 3 does not directly and unambiguously disclose the composition defined in claim 1. The same conclusion applies to claims 2 to 10, which depend on claim 1.

4.2 With regard to D1 that was also cited against claim 1 as maintained in first instance, it is undisputed that the film of its example 2 does not comprise a gas barrier layer. The films of examples 3-7 on the other hand comprise gas barrier layers but do not contain more than 28% by weight of polystyrene polymer. There is no evidence which would back up the appellant's argument that the incorporation of a gas barrier layer, as foreseen in the description (par. 0075 - 0081), into the film of example 2 would inevitably result in a film containing more than 28% by weight of polystyrene polymer because, as laid out above, the polystyrene content of all the examples which include such a layer is consistently below 28 %. Hence, D1 does not disclose a film having a barrier layer which also contains at least 28 % by weight of polystyrene polymer, so that the subject matter of claim 1 is novel over D1. The same conclusion applies to claims 2 to 10, which depend on claim 1.

4.3 D13 was filed after the parties were summoned to oral proceedings. Evidence filed at this stage of the proceedings is admitted only in exceptional circumstances (Article 25(1) and 13(2) RPBA 2020). As appellant's attack is not successful even if D13 is considered, see point 4.1 above, no decision on its admissibility needs to be taken.

5. Inventive step

5.1 The board came to the conclusion that the claims of the main request involve an inventive step, and so meet the requirements of Article 56 EPC, for the following reasons.

5.2 In its preliminary opinion, the Board held that D6, example 3, was the best starting point for the assessment of inventive step. This proposition was not challenged by the parties. In particular, the appellant did not argue that D1 or D3 represented the closest prior art and no attack against claim 1 of the main request starting from D1 or D3 was presented. Hence there is no reason to deviate from this preliminary conclusion.

5.3 According to par. 0010 of the contested patent, the invention addresses the problem of providing films suitable for the new "thermoform-shrink" process. The appellant argued that the problem to be solved should be formulated in less ambitious terms. Although the Board sees no need to re-formulate the problem, it is accepted in appellant's favour that the problem may be seen in the provision of an alternative film.

5.4 It is uncontested that the problem of providing an alternative to the film of example 3 of D6 is solved by

the film of claim 1, which is biaxially oriented, heat shrinkable and has a different composition than the film of D6, see point 4.1.

5.5 The Board holds that the solution as proposed in claim 1 is not obvious for the skilled person because even if - as suggested by the appellant - it were obvious for the skilled person to render the film of example 3 heat shrinkable by biaxial orientation as taught in D6 (par. 0057), there appears to be no reason as to why the skilled person would further modify the composition of the film of example 3 in such a way as to arrive at the subject matter of claim 1. In particular, there is no reason why the skilled person would have replaced the Orevac 16910 with a styrene-butadiene block copolymer having a major proportion of styrene. In the grounds of appeal, the appellant indicated that resins having a major proportion of styrene were known from D2 and D7, but no reasons were given why the skilled person would have turned to these documents. The Board notes that in a multilayer film the layers fulfill certain functions and need to have the corresponding properties. In the multilayer film of example 3 of D6, the Orevac-layers act as tie-layers, i.e. they improve the adhesion between the gas barrier layer and the other layers of the film, see par. 0040 and 0045-0048 of D6. There is however no evidence on file that a styrene-butadiene block copolymer having a major proportion of styrene and having the required adhesion properties to the EVOH-barrier layer of example 3 would have been available to the skilled person, let alone from D2 or D7. Hence the Board concludes that the subject matter of claim 1 of the main request (and that of claims 2 to 10, which depends thereon) is not obvious when starting from D6.

5.6 While the appellant attacked claim 1 as maintained by the opposition division starting from D1 or D3 as the closest prior art, no such attack has been formulated against claim 1 of the main request, be it in written form or during the oral proceedings. In the grounds of appeal, (point II.7.1) it is mentioned that subject matter of granted claim 2, which has been incorporated into claim 1 of the main request, was disclosed in D2 and D7, but no attempt has been made to explain why the skilled person would have turned to D2 or D7, when starting from either D1 or D3. Therefore the Board concludes that it has not been shown that the subject matter of claim 1 lacks an inventive step over D1 or D3. The same applies to claims 2 to 10, which depend on claim 1.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent in amended form on the basis of the claims 1 to 10 of the main request, filed as auxiliary request 3 (claim set E) with letter of 6 September 2017, and a description to be adapted if appropriate.

The Registrar: The Chairman:

A. Pinna J.-M. Schwaller

Decision electronically authenticated