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Datasheet for the decision of 2 April 2025

Case Number: T 1067/23 - 3.3.09

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Language of the proceedings: EN

Title of invention:
HEAT-SHRINKABLE MULTILAYER FILM

Patent Proprietor:
Kureha Corporation

Opponent:
isarpatent - Patentanwälte Behnisch Barth Charles Hassa Peckmann und Partner mbB

Headword:
Multilayer film/KUREHA

Relevant legal provisions:
EPC Art. 56
EPC R. 84(1)
RPBA 2020 Art. 12(2), 12(4)

Keyword:
Inventive step - (no) - obvious alternative
Amendment to case - amendment admitted (yes)

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Boards of Appeal

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Case Number: T 1067/23 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 2 April 2025

Appellant: (Opponent)	isarpatent - Patentanwälte Behnisch Barth Charles Hassa Peckmann und Partner mbB Friedrichstrasse 31 80801 München (DE)
Representative:	isarpatent Patent- und Rechtsanwälte Barth Charles Hassa Peckmann & Partner mbB Friedrichstrasse 31 80801 München (DE)
Respondent: (Patent Proprietor)	Kureha Corporation 3-3-2, Nihonbashi-Hamacho, Chuo-ku Tokyo 103-8552 (JP)
Representative:	Hoefer & Partner Patentanwälte mbB Pilgersheimer Straße 20 81543 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 30 March 2023 concerning maintenance of the European Patent No. 2993042 in amended form.**

Composition of the Board:

Chairman	A. Haderlein
Members:	C. Meiners
	N. Obrovski

Summary of Facts and Submissions

I. The appeal was filed by the opponent (appellant) against the opposition division's interlocutory decision finding that, on the basis of the second auxiliary request, filed during oral proceedings before the opposition division, the European patent met the requirements of the EPC.

II. In the decision under appeal, the opposition division concluded, *inter alia*, that the ground for opposition under Article 100(b) EPC did not prejudice maintenance of the patent as granted. However, the subject-matter of claim 1 as granted lacked an inventive step in view of D1/D1a as the closest prior art in combination with document D3. Moreover, the opposition division held, *inter alia*, that the subject-matter of claim 1 of the first auxiliary request then on file involved an inventive step. Claim 3 of that request, however, was inconsistent with claim 1 and thus did not meet the requirement of Article 84 EPC. The second auxiliary request, filed during the oral proceedings on 21 February 2023, however, was held to be allowable.

III. In its notice of opposition, the appellant had requested revocation of the patent in its entirety based on, *inter alia*, the ground under Article 100(a) EPC (lack of inventive step).

IV. The following documents are relevant for the present decision:

D1 JP 2005-119282 A
D1a Machine translation of D1 into English

D1b Partial human translation of D1 (JP 2005-119282 A) into English

D3 EP 0 358 038 A1

D15 UBE Corp., product overview "Extrusion Engineering Plastics", internet excerpt, https://www.ube.com/contents/en/chemical/nylon/nylon_extrusion.html

D16 Excerpt from the database MatWeb for UBE 5023 Co-polyamide 6/66, internet, https://www.matweb.com/search/datasheettext.aspx?Matguid=4f82956a1f9b4c6589a1d61164f76d4a

Documents D1b, D15 and D16 were filed with the statement setting out the grounds of appeal.

V. By a communication pursuant to Rule 84(1) EPC, the appellant was informed of the lapse of the patent with effect for all the designated contracting states and that the opposition proceedings might be continued at the request of the opponent.

VI. In a submission dated 28 February 2025, the appellant replied within the time limit set and requested "that the appeal proceedings be continued".

VII. Claim 1 of the second auxiliary request, filed on 21 February 2023, reads as follows (identification of features as referred to in point II.1 of the statement of grounds of appeal):

[1] "A heat-shrinkable multilayer film for being filled with contents, the film comprising:

[1.1] an outer surface layer (A) comprising a heat-resistant thermoplastic resin, which is a polyester-based resin;

[1.2] an intermediate layer (B) comprising a polyamide-based resin; and

[1.3] an inner surface layer (D) comprising an ethylene-based copolymer;

[1.4] and an adhesion strength between the inner surface layers after treatment with 80°C hot water being not less than 10 N/15 mm, wherein

[1.2.1] the polyamide-based resin that constitutes the intermediate layer (B) comprises a mixture of 80 to 90 mass % of aliphatic polyamide, which is a polyamide 6-66 copolymer and 10 to 20 mass % of amorphous aromatic polyamide, which is a polyamide 6I-6T, and

[1.2.2] a layer thickness of the intermediate layer (B) accounts for 25 to 40% of a total thickness of the heat-shrinkable multilayer film,

[1.3.1] the ethylene-based copolymer that constitutes in the inner surface layer (D) is an ethylene-vinyl acetate copolymer

[1.3.1.1] having a vinyl acetate content from 15 to less than 25 mass% and

[1.3.1.2] a melting point measured by a differential scanning calorimeter in conformance with JIS K7121 of 80 to 95°C, and

[1.1.1] the outer surface layer (A) is not less than 6% and less than 50% in thickness of the intermediate layer (B)."

VIII. The appellant's arguments in the appeal proceedings which are relevant to the present decision can be summarised as follows.

In respect of the requirement of inventive step, the subject-matter of claim 1 of the second auxiliary request was obvious in view of example 3 of D1/D1a as the starting point for assessing inventive step. It followed from documents D1b, D15 and D16 that the

polyamide used in example 3 of D1 was a nylon 6/nylon 6.6 copolyamide. Hence, the polyamide used was thus not a distinguishing feature. Therefore, the distinguishing technical features in view of D1 were i) feature 1.2.1, ii) feature 1.2.2 and iii) feature 1.1.1 of claim 1. No synergistic effect had been corroborated that could be associated with said features. Hence, three distinct partial technical problems arose from these distinguishing features, each of which was the provision of an alternative heat-shrinkable film.

Regarding the obviousness of the subject-matter of claim 1, examples 16 to 19 of D3 also disclosed heat-shrinkable multilayer films for meat packaging. These films comprised an intermediate layer containing 20 wt% of the amorphous polyamide hexamethyleneisophthalamide-hexamethyleneterephthalamide copolymer (hereafter nylon 6I/6T) and 80 wt% of an aliphatic polyamide. This corresponded to feature 1.2.1. Similarly, D3 explicitly disclosed a limit value of 10 wt% for the amorphous nylon copolyamide and one of 90 wt% for the aliphatic crystalline nylon copolymer. Regarding feature 1.2.2, the three-layer films used in examples 16 to 19 of D3 had a layer thickness ratio of 12:7:6. Hence, the thickness of the intermediate polyamide layer accounted for 28% of the multilayer films' total thickness. Features 1.2.1 and 1.2.2 were thus disclosed in combination in D3.

While the opposition division had concluded that a combination of nylon 6I/6T with nylon 6/6.6 was not disclosed in D3, it had to be taken into account that the intermediate layer in D1 already comprised nylon 6/6.6 [also referred to as nylon 6/66]. Thus, the addition of 20 wt% nylon 6I/6T would be obvious to the person skilled in the art.

In respect of feature 1.1.1, the person skilled in the art had no reason to adhere to the layer thickness ratio of 12:7:6 disclosed in examples 16 to 19 of D3 when introducing the amorphous aromatic copolyamide nylon 6I/6T into the intermediate polyamide layer in D1.

In view of these considerations, the subject-matter of claim 1 was obvious in light of the disclosure of D1 in combination with that of document D3 and thus did not meet the requirement of Article 56 EPC.

IX. The patent proprietor (respondent) had not filed any claim requests or substantive submissions in the appeal proceedings, but had merely declined to participate in the initially scheduled oral proceedings before the Board, which were subsequently cancelled.

X. Requests

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

Reasons for the Decision

1. Admittance of evidence

1.1 With its statement of grounds of appeal, the appellant filed documents D1b, D15 and D16. D1b is a partial translation of document D1 into English. D15 is an excerpt from the website of UBE industries, featuring polyamide grades for extrusion applications. D16 is an excerpt from the internet database MatWeb and is directed to the product 'UBE 5023'.

1.2 The respondent submitted at the oral proceedings before the opposition division that a *blend* of nylon 6 and nylon 6.6 was used in D1 rather than a nylon 6/6.6 *copolymer*. Consequently, the appellant submitted document D1b at the earliest opportunity. The disclosure of document D1b is not complex and confirms the appellant's view that the aliphatic polyamide used in example 3 of D1 does not constitute a further distinguishing technical feature. D1b is thus relevant to the decision to be taken by the board. Similarly, documents D15 and D16 further corroborate that the polyamide employed in example 3 of D1 is a nylon 6/6.6 *copolymer.* The board thus admits D1b, D15 and D16 into the proceedings (Article 12(2) and (4) RPBA).

2. Inventive step

2.1 Closest prior art

In the decision under appeal, document D1 was regarded as the closest prior art, in particular example 3 thereof. An inventive step was acknowledged in view of D1 in combination with, *inter alia*, document D3. The board agrees with the opposition division and the appellant that document D1 represents a suitable starting point for assessing inventive step. Like the patent, it is concerned with the provision of coextruded multilayer heat-shrinkable films suitable for meat packaging. The resulting meat mass package has a good visual appearance in which the meat drip exuding from the meat mass after packaging is inconspicuous (see paragraph [0001] of D1a). In example 3, the multilayer film contains an interlayer (B) comprising a nylon 6/6.6 copolymer (see D1b, D15 and D16), an outer surface layer (A) comprising PET-G as a heat-resistant

thermoplastic polyester film, and an inner surface layer (D) comprising an ethylene vinyl acetate copolymer having an ethylene vinyl acetate content of 19 wt% and a maximum melting peak temperature of 84°C.

2.2 Distinguishing technical features

The opposition division concluded that the aforementioned technical features 1.1.1 (referred to as feature 1.5 in their decision), 1.2.1 and 1.2.2 distinguished claim 1 from example 3 of D1. Feature 1.4 was considered inherently met. The board sees no reason to depart from this conclusion.

2.3 Technical effect and resulting objective technical problem

2.3.1 The opposition division did not acknowledge any technical effect for the three distinguishing features (see in particular points 13.5 and 13.6 of the decision under appeal dealing with corresponding features 1.2.1 and 1.2.2 in the context of the main request underlying that decision). Likewise, the appellant submitted that none of these features was associated with a technical effect. The board has no reason to take a different view.

2.3.2 Unlike the appellant, however, the board does not see three partial problems arising from the distinguishing features. Instead, the board takes the view that a single objective technical problem can be formulated, which is to provide an alternative heat-shrinkable multilayer film.

2.4 Obviousness

2.4.1 Like document D1, D3 is also concerned with providing multi-layer films for meat packaging. The films of D3 also comprise a polyamide intermediate layer, which provides barrier properties against, *inter alia*, oxygen. The blend of an amorphous aromatic polyamide (nylon 6I/6T is featured in D3 in this respect) and an (aliphatic) copolyamide having a melting point of at least 145°C (such as nylon 6/12 or nylon 6/6.6) ensures, *inter alia*, that good oxygen barrier properties can be achieved. Consequently, the technical teachings of D1 and D3 are compatible.

2.4.2 Concerning feature 1.2.1, starting from example 3 of D1/D1a, a skilled person wishing to provide an alternative film having suitable properties for meat packaging would consider implementing a polyamide intermediate layer as featured in D3 with a reasonable expectation of success. This implementation would mean replacing some of the nylon 6/6.6 copolymer with an aromatic amorphous polyamide nylon 6I/6T as proposed in D3. D1 does not teach against such replacement.

2.4.3 Further concerning feature 1.2.1, the appellant correctly submitted that in examples 16 to 19 of D3, the intermediate layer comprising the polyamides contains 20 wt% of the amorphous polyamide (nylon 6I/6T). Likewise, they stressed that the explicitly disclosed lower limit for the content of the amorphous polyamide in the polyamide blend in D3 is 10 wt% (page 6, lines 11 to 18).

The opposition division also noted in the decision under appeal that D3 therefore discloses contents of 10 wt% and 20 wt% of amorphous copolyamides in the

polyamide interlayer. However, they concluded in point 14.3.3 of the reasons for the decision that a *combination* of amorphous nylon 6I/6T and nylon 6/6.6 was not disclosed. Feature 1.2.1 was thus not obvious.

Regarding this conclusion, however, the appellant correctly submitted that example 3 of D1 already *includes* nylon 6/6.6 as a copolyamide in the interlayer and that it would be obvious to add an *additional* e.g. 20 wt% (calculated on total polyamide mass) of the amorphous copolyamide nylon 6I/6T.

Hence, implementing feature 1.2.1 by adding amorphous nylon copolymer nylon 6I/6T to the nylon material making up the intermediate polyamide layer in example 3 in amounts of e.g. 10 wt% or 20 wt% would have been obvious to a skilled person in view of D3.

2.4.4 Adjusting the thickness ratio between layer (B) and the total film thickness as called for in feature 1.2.2 merely requires a slight increase of the layer thickness in example 3 of D1 from 23% to e.g. 25%. The opposition division stated in their decision that D3 itself proposed using an intermediate polyamide layer (B) that preferably comprises 20% to 30% of the total film thickness (page 15, lines 17 to 19) and that examples 16 to 19 show a layer thickness accounting for 28% of the total layer thickness (see page 12, line 46 and table 5). Hence, the opposition division concluded in point 13.10 of the reasons for the decision under appeal that such a modification would have been obvious to a skilled person. The board sees no reason to deviate from this conclusion.

2.4.5 Regarding the layer thickness ratio of layer (A) to layer (B) as required in feature 1.1.1, it is true that

examples 16 to 19 of D3 disclose layer thickness ratios of 12:7:6 for the first outer layer/intermediate layer/ second outer layer, respectively. Nevertheless, the skilled person has departed from D1, featuring in example 3 a respective (A) to (B) layer ratio of 60 %.

2.4.6 It would have been within the skilled person's remit to routinely adapt the thickness of individual layers in a multilayer film without inventive effort. Implementing feature 1.1.1 in D1 in view of D3 would thus have been obvious to the person skilled in the art.

2.4.7 Therefore, a skilled person seeking to provide further heat-shrinkable multilayer films for meat packaging would have arrived at the subject-matter of claim 1 in an obvious way in view of D1 as the closest prior art in light of the secondary technical teaching of D3. Consequently, the subject-matter of claim 1 does not meet the requirement of Article 56 EPC.

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:

K. Götz-Wein A. Haderlein

Decision electronically authenticated