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Datasheet for the decision of 24 July 2026

Case Number: T 0383/25 - 3.3.09

Application Number: 17888298.1

Publication Number: 3564009

IPC: C08J5/18, C08J7/06

Language of the proceedings: EN

Title of invention:
BIAXIALLY ORIENTED POLYPROPYLENE FILM, METALLIZED FILM, AND CAPACITOR

Patent Proprietor:
Oji Holdings Corporation

Opponent:
Treofan Germany GmbH & Co. KG

Headword:
Biaxially oriented polypropylene film/OJI HOLDINGS

Relevant legal provisions:
EPC Art. 54(1), 56, 83, 123(2)
EPC R. 115(2)

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It can be changed at any time and without notice

Keyword:

Appellant - dissolved by operation of law (yes) - ceased to exist in legal terms (no) - appeal proceedings to be continued (yes)
Summons to oral proceedings - continuation of proceedings without duly summoned party - (yes)
Amendments - added subject-matter (no)
Sufficiency of disclosure - main request (yes)
Novelty - main request (yes)
Inventive step - main request (yes)

Decisions cited:

T 0353/95, T 2334/08

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Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

Case Number: T 0383/25 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 24 July 2026

Appellant: (Opponent)	Treofan Germany GmbH & Co. KG Bergstrasse 66539 Neunkirchen (DE)
Respondent: (Patent Proprietor)	Oji Holdings Corporation 7-5, Ginza 4-chome Chuo-ku Tokyo 104-0061 (JP)
Representative:	Müller-Boré & Partner Patentanwälte PartG mbB Friedenheimer Brücke 21 80639 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted/ electronically transmitted on 20 February 2025 concerning maintenance of the European Patent No. 3564009 in amended form.**

Composition of the Board:

Chairman	A. Haderlein
Members:	C. Meiners
	G. Decker

Summary of Facts and Submissions

I. The appeal lies from the opposition division's interlocutory decision according to which the patent, on the basis of the main request filed with the letter dated 31 January 2025, complies with the EPC.

II. In its notice of opposition, the opponent (appellant) had requested revocation of the patent in its entirety based on the grounds for opposition under Article 100(c) EPC, Article 100(b) EPC and Article 100(a) EPC in conjunction with Articles 52(1), 54 and 56 EPC.

III. The following documents are relevant to the present decision:

D3 WO 2013/105552 A1
D3a US 2015/0140266 A1
D4 WO 2016/158353 A1
D4a US 2018/0093409 A1
D6 WO 2016/158590 A1
D6a EP 3 275 624 A1
D7 A. J. de Vries, "Structure and properties of uni- and biaxially oriented polypropylene films: Part I-Structural Characterization", Pure & Appl. Chem., vol. 53, pp. 1011-1037, 1981
D10 Original copy of non-patent document "Hiroshi Awaya, Guide for polarization microscope of high-molecular-weight material, pp. 105-120, 2001"
D10t True English translation of non-patent document "Hiroshi Awaya, Guide for polarization microscope of high-molecular-weight material, pp. 105-120, 2001"

D10a Marked-up version of document "Hiroshi Awaya, Guide for polarization microscope of high-molecular-weight material"

D13 Printout of the webpage https://www.agne.co.jp/books-books/ISBN978-4-900041-93-6.html, retrieved on 27 January 2025

D14 Webpage printout from Scientific Polymer Products Inc. "Refractive index of polymers by index", retrieved from https://scipoly.com/technical-library/refractive-index-of-polymers-by-index/

D15 Internet excerpt, retrieved from <www.google.de> searching for "polypropylene refractive index"

D16 Google search for document D10, published in 2001, retrieved on 14 July 2025

IV. In the decision under appeal, the opposition division decided that the main request complied with Rule 80 EPC and that the patent disclosed the subject-matter of the main request in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. The subject-matter of claim 1 of the main request did not extend beyond the content of the application as filed. The claimed subject-matter was novel over D3 and D6. In view of D3 as the closest prior art, the claimed subject-matter was not obvious either and it therefore met the requirements of Article 56 EPC.

Moreover, the opposition division admitted document D13 into the proceedings.

V. Claim 1 (as granted) of the **main request** reads:

"A biaxially stretched polypropylene film comprising a polypropylene resin, the biaxially stretched polypropylene film having a thickness of 1.0 to 3.0 µm

and having a molecular orientation coefficient ΔNx of 0.0130 to 0.0160, as calculated according to formula (1):
Molecular orientation coefficient ΔNx = (ΔNxy + ΔNxz)/2 (1)
on a basis of a birefringence value ΔNxy in a slow axis direction with respect to a fast axis direction and a birefringence value ΔNxz in the slow axis direction with respect to a thickness direction, as measured via optical birefringence measurement in accordance with the description,
wherein the biaxially stretched polypropylene film is obtainable by a production method including, in this order, the following steps 1 to 4:
(1) step 1 of heating and melting a resin composition containing a polypropylene raw material resin,
(2) step 2 of extruding the heated and melted resin composition,
(3) step 3 of cooling and solidifying the extruded resin composition to obtain a cast sheet,
and
(4) step 4 of stretching the cast sheet in a flow direction and in a width direction,

wherein, in step 4, the longitudinal stretching ratio is 3 to 4.7, the lateral stretching angle is 8.5° to 13.5°, and the lateral stretching temperature is higher than 140°C and 180°C or lower."

VI. Oral proceedings before the board were conducted in the absence of the appellant, which had been duly summoned (Rule 115(2) EPC).

VII. The parties' arguments, where relevant to the present decision, are reproduced below in the reasons for the decision.

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

The respondent (patent proprietor) requested as its main request that the appeal be dismissed. In the alternative, it requested that the decision under appeal be maintained in amended form on the basis of the claims according to one of auxiliary requests 1 to 10 filed with the reply to the statement setting out the grounds of appeal.

Reasons for the Decision

1. Existence of the opponent and its absence from the oral proceedings

1.1 In preparation for the oral proceedings, the board made enquiries as to whether the appellant, which was no longer represented by a professional representative, intended to attend the oral proceedings. In this context, a company that was not party to the proceedings informed the board by letter dated 9 July 2026 of its view that the appellant no longer existed.

1.2 The board is required to establish of its own motion whether the appellant still exists. If the appellant ceases to exist as a legal person, it loses its capacity to be a party in the proceedings. Consequently, the appeal proceedings become devoid of purpose and must be declared terminated (see T 353/95, Reasons 2; T 2334/08, Reasons 3 *et seq.*).

1.3 The board's enquiries established that insolvency proceedings had been opened in the meantime in respect of the appellant and that, as a result, it had been dissolved by operation of law. However, under German law, the dissolution of a company does not immediately bring its legal existence to an end. Instead, the company continues to exist for the purpose of winding up its affairs until it is removed from the commercial register. In the present case, the appellant retained its entry in the German commercial register and had not yet been removed from the register. It therefore continued to exist and remained a party in the appeal proceedings.

1.4 The appellant had been duly summoned to the oral proceedings but did not attend. The proceedings could therefore be continued in its absence pursuant to Rule 115(2) EPC.

2. Amendments - main request

2.1 The appellant submitted that five amendments in claim 1 of the main request were disclosed at best as separate embodiments in the original application documents. These amendments correspond to features (1) to (5) as identified below:

(1) "*in accordance with the description*"

(2) "*wherein the biaxially stretched polypropylene film is obtainable by a production method including, in this order, the following steps 1 to 4:*
(1) step 1 of heating and melting a resin composition containing a polypropylene raw material resin,

(2) step 2 of extruding the heated and melted resin composition,
(3) step 3 of cooling and solidifying the extruded resin composition to obtain a cast sheet, and
(4) step 4 of stretching the cast sheet in a flow direction and in a width direction"

(3) "*wherein, in step 4, the longitudinal stretching ratio is 3 to 4.7*"

(4) "*the lateral stretching angle is 8.5° to 13.5°, and*"

(5) "*the lateral stretching temperature is higher than 140°C and 180°C or lower*".

2.2 According to the appellant, there was no pointer to the resulting feature combination in the application as filed in the general part of the description. The examples did not provide any basis for the claimed subject-matter either. The examples were not reproducible and various other features of the examples were missing from claim 1. The subject-matter of claim 1 therefore constituted an intermediate generalisation over the specific examples.

2.3 The board observes that, first and foremost, the examples of the patent application as filed disclose a method for determining the molecular orientation coefficient and birefringence values in paragraph [0186]. The feature "in accordance with the description" inserted into the original claim 1 as a basis for claim 1 therefore does not add matter.

2.4 Likewise, amendments (2) to (5) as identified above define process steps that are *essential* for providing the desired biaxially stretched polypropylene films. A specific hint or pointer to this feature combination is

disclosed on page 82, lines 9 to 13, of the translation of the original application. It is mentioned there that the longitudinal stretching ratio, the lateral stretching temperature and the lateral stretching angle are parameters that *particularly* affect the desired physical properties of the present embodiment. This statement relates to the method described in more general terms in paragraph [0124]. What is more, the preferred value ranges for these key properties are described in paragraphs [0150] and [0151] as filed. This is reflected in the examples - see Tables 1 and 2 and film properties described therein for the inventive and comparative examples. In this context, it is irrelevant whether the examples are reproducible. These limitations are essential features for reliably carrying out the claimed invention.

Even when considering the insertion of the reference to the measurement method as the aforementioned amendment (1) a selection step, the insertion of features (2) to (5) into claim 1 as filed constitutes a limitation of the claimed subject-matter to the core teaching of the application, pointed to in the above-mentioned paragraphs (also in general terms and not only in the specific examples). There is thus no inadmissible intermediate generalisation over the application as filed arising from the feature combination of amendments (2) to (5) either.

Therefore, the board is satisfied that the aforementioned combination of features (1) to (5) is directly and unambiguously disclosed in the original application documents.

Therefore, the subject-matter of the patent as amended does not extend beyond the content of the application as filed (Article 123(2) EPC).

3. Sufficiency of disclosure - main request

3.1 Refraction angle r

3.1.1 The appellant submitted that the non-patent document referred to in paragraphs [0036] and [0206] of the patent, namely "Hiroshi Awaya, Guide for polarization microscope of high-molecular-weight material pp. 105-120, 2001" (see documents D10/D10t), had not been available to the person skilled in the art on the priority date. There was no evidence on file showing that D10, D10a and D10t correctly reflected the content of the said non-patent document cited in the application as filed and in the patent as amended in the decision under appeal. In addition, it had not been shown when and how D10, D10a and D10t had been available and to whom they were available, especially the public, to exclude any kind of secrecy agreement. Hence, the skilled person had been prevented from obtaining the necessary information for determining the refraction angle.

3.1.2 The board does not agree. Firstly, no serious doubts substantiated by verifiable facts have been raised by the appellant as to whether a skilled person would even need the data in Table 6.1 of D10 to determine the refraction angle values. Paragraph [0038] of the patent sets out that the values of the refraction angle described on page 109 of that document *may be used*.

This does not mean that a skilled person using their common general knowledge would have had to rely on D10.

By contrast, the required information can be easily obtained by applying the commonly known Snell's Law. Given the refractive index of polypropylene, which was commonly known to a skilled person and easily measurable, and the angle of incidence, the angle of refraction can be calculated. This relationship formed part of the common general knowledge in the field on the priority date of the patent. Hence, a skilled person was not confronted with an undue burden as regards this aspect.

All further pieces of information needed for determining the relevant parameter ΔNx are provided in paragraphs [0032] to [0039] and [0206] to [0211] of the patent. The appellant has not demonstrated that any potential significant fluctuations of the values determined for ΔNx are to be expected when applying the measurement method as described in the patent in these paragraphs, let alone demonstrating that this would lead to a situation in which a skilled person would be deprived of the merits of the invention as featured in the examples. Such doubts do not arise from the data provided in Tables 1 and 2 on page 32 of the statement of grounds of appeal.

Furthermore, the board has no doubt that a skilled person was likewise in a position to determine the value of the second term in the numerator of equation (1), namely ΔNxz, as the difference between the refractive indices in x-direction and z- direction in an oriented polymer film.

3.1.3 Secondly, the appellant failed to demonstrate that D10 was not available on the priority date. The appellant submitted that problems with publications by authors with a name of most probably Asian spelling (Hiroshi

Awaya) were known. However, this does not constitute a sufficient reason showing that D10 was not available on the priority date. By contrast, the respondent convincingly submitted that, if searching (e.g. on the internet) for the original title in Japanese, as disclosed in paragraph [0033] of WO 2018/124300 A1 as the published international application and in paragraph [0032] of the corresponding priority document JP2016256161, the book D10 would have been retrieved. More specifically, the respondent set out that copying the Japanese characters in a Google search led directly to the corresponding website. This was not rebutted by the appellant with any evidence or plausible argumentation. Taking this into account, a skilled person could have relied on the original Japanese title of D10 as provided in the corresponding international application. The board also holds that there is no requirement to provide ISBN numbers for book citations in European patents.

The idea that a book which was published in 2001 would not be available at least in libraries does not seem to be convincing. Hence, the board sees no need for proof that the aforementioned book is still available, e.g. through the filing of D16. Nevertheless, the fact that the book was reprinted several times after the first edition in 2001 is already derivable from D13, showing an edition from 2011 as well. The board further considers that the listing of seven editions/prints of the book in document D13 under the given ISBN is, in itself, indicative of a certain degree of dissemination. The board thus has no doubt that the information content of D10 (referred to in the patent) forms part of the prior art under Article 54(2) EPC and was available to the skilled person before the priority date of the patent. The appellant's speculation that

D10 could have been subject to a secrecy agreement is not therefore persuasive. There is no information at hand to show that the reprints differed in terms of their content, let alone in the specific pages 105 to 120 referred to in the patent.

The appellant's argument that only very few researchers used the method in 2001 for studying the orientation of polymer films does not seem to be at odds with the above findings. The board has no doubt that D10, D13 and the corresponding references in the patent concern one and the same source of information. The document D10 (the year 2001 is identified on page ii thereof) contains pages 105 to 120 referred to in the patent and thus plausibly the required information.

Furthermore, the appellant's criticism that the translation D10t is not complete and does not include, for example, Chapter 5 does not seem to invalidate the above conclusions since the patent refers only to Chapter 6 (pages 105 to 120) of D10.

To the board, the appellant's argument that it was not clear whether the non-patent document referred to in paragraphs [0036] and [0206] formed part of a book, an article or a journal does not seem to be conclusive. The indication "pp. 105–120", in the absence of any reference to a journal or journal volume, suggests that the cited document is a book comprising at least 120 pages.

It is not at odds with these conclusions that document D7 discusses the average molecular orientation of biaxially oriented polypropylene but does not mention a molecular orientation coefficient. This was another argument presented by the appellant to support its view

that the information missing from the patent could not be supplemented by common general knowledge.

In conclusion, no lack of sufficiency arises from the refraction angle r.

3.2 Terms "slow axis direction" and "fast axis direction"

The appellant asserted that said terms had no well-known meaning in the art and were not defined in the patent. The board disagrees. The patent description sets out in paragraph [0033]: "[o]f the x-axis and y-axis which are the main axes in the in-plane direction of the film, the slow axis in the direction giving a higher refractive index is regarded as the x-axis, and the fast axis in the direction giving a lower refractive index is regarded as the y-axis".

3.3 Method steps not achieving the desired effect

The appellant also submitted that it followed from Comparative Examples 1, 3, 5 and 7 of the patent that the application of method steps (1) to (4) of claim 1 did not result in a polypropylene film having a molecular orientation coefficient as defined in claim 1.

This objection is not convincing either. The patent describes how the required parameter can be influenced in particular by i) the longitudinal stretching ratio, ii) the lateral stretching angle and iii) the lateral stretching temperature. This is derivable from the examples of the patent and paragraphs [0161] to [0163] of the description of the patent. A skilled person would thus have been in a position to adjust these parameters i) to iii) in order to turn failure into

success. There are thus no verifiable facts that could cast doubt on the sufficient disclosure of the claimed subject-matter in this regard either.

3.4 Examples of D6

Comparative Example 7 of D6 differs from the method steps of claim 1 at least in that the total longitudinal stretching ratio is 5.36 and the lateral stretching angle is unknown. It cannot therefore be argued, as the appellant sought to do, that the application of the method steps of claim 1 would result in failure rather than in the claimed invention.

3.5 Lack of details of example calculations and variations in measured refraction angles

3.5.1 It is incumbent on the appellant to demonstrate insufficiency. The appellant, however, failed to demonstrate that, when applying the corresponding pertinent teaching of the patent referred to above, a skilled person would not have obtained the data shown in Table 2 of the patent. This teaching includes the methods for calculating the molecular orientation coefficient as identified in the patent. There is no evidence to suggest that the examples fall outside of the scope of claim 1.

3.5.2 Such doubts do not arise from the information contained in Tables 1 and 2 on page 32 of the statement of grounds of appeal or the refractive index values for polypropylenes referred to in D14 and D15 either. For a refractive index of 1.508, the data in Table 1 show a deviation in D10 from the expected refraction angle only at angles of incidence of 20° and 35°. However, the patent relies only on the values at 20° for

determining ΔNzy; the values at 35° are not used for this purpose (see paragraph [0208]).

Even if the skilled person had not corrected the error in the refraction angle r at 20° by applying Snell's law, it has still not been demonstrated that the resulting deviation would have a significant impact on ΔNx. This is all the more true since an *average* value for ΔNzy is determined from incidence angles of 20°, 30°, 40° and 50° - see paragraph [0208] of the patent. As regards the data in Table 2 on page 32 of the statement of grounds of appeal, these data seem *prima facie* inconclusive. What the board infers from the data, however, is that the deviation of the refraction angle r as calculated on the basis of a refractive index of 1.492 for polypropylene is small. This can be deduced by comparing the data in the third row of Table 1 with the data in the fourth row of Table 2. The data show the calculated values of r as determined by Snell's law at n = 1.508 and 1.492, respectively. Deviations of only about 1% are calculated.

Any remaining fluctuation of the reading values of ΔNx in relation to the forbidden area of claim 1 can - if present - be subsumed, instead, under the requirements of Article 84 EPC (see Case Law of the Boards of Appeal of the European Patent Office, 11th edition, revised version 2026 ("CL"), II.C.6.6.4 and decisions cited therein) and not under the requirement of sufficiency of disclosure.

3.5.3 Even when taking D14, D15 and the corresponding arguments into account, they do not support insufficiency of disclosure. Their admittance can thus be left undecided.

3.5.4 The examples of the patent feature the starting polypropylene resins employed and the methods for preparing the cast sheets and resulting biaxially oriented films. Hence, there is no information at hand indicating that the examples could not be reworked. As long as a skilled person is in a position to prepare embodiments falling within the scope of claim 1 without undue burden, this would not even be a requirement for sufficiency. Reworking the examples of the patent could be a starting point for creating further embodiments falling within the scope of claim 1.

On page 16 of the statement of grounds of appeal, the appellant reiterates its arguments referred to in point 4.6.1 of the decision under appeal without commenting on the rebuttal of those arguments in point 4.6.3. In this respect, the statement of grounds of appeal does not set out clearly and concisely the reasons for requesting reversal of the decision under appeal (see Article 12(3) RPBA). The board, however, agrees with the opposition division's criticism in point 4.6.3 concerning the relevance of the data provided in the table and sees no reason to elaborate further on that matter. The view that a refraction angle is dependent on the material seems to be misleading in view of the fact that it results from the refractive index and angle of incidence. The idea that a refractive index of polypropylene can "slightly vary" does not seem to be at odds with the opposition division's conclusion that the reference book D10 is not plausibly needed for calculating ΔNx. A skilled person would have been in a position to determine the refractive index of a polypropylene material and to calculate the angle of refraction using Snell's Law.

3.6 Further experimental details missing from the patent

Contrary to what was argued by the appellant, the board sees no insufficiency of disclosure arising from the fact that, allegedly, no details concerning the measurement of the film thickness values or retardation values R at different inclination values are provided in the patent. In this regard, the board reiterates that patent documents address the skilled person. The method to be applied for measuring the film thickness is identified in paragraph [0205] of the patent. Likewise, determining optical retardation values would plausibly have been within the remit of a skilled person engaged in determining (optical) film properties.

3.7 To sum up, the European patent discloses the subject-matter of claim 1 in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC).

4. Novelty - main request

4.1 Document D3 was cited by the appellant against the novelty of claim 1. D3 is directed to biaxially stretched polypropylene films for capacitors. The films have a thickness of 1 to 6 micrometres (see paragraph [0043] of D3a, which is an English translation of D3).

4.2 The appellant submitted that the claimed subject-matter lacked novelty since specific sub-ranges for the longitudinal stretching ratio, the lateral stretching angle and the lateral stretching temperature defined in claim 1 did not meet the criteria for a selection invention over the disclosure of D3. The appellant submitted that the disclosure of D3 did not explicitly

indicate a longitudinal stretching ratio of 3 to 4.7. However, in view of the overlap between the ranges specified in claim 1 and in D3 for this feature and the lack of evidence of the significance of this feature in the patent, the biaxially stretched polypropylene films of D3 could not be discerned from those as claimed in claim 1. The lateral stretching angle of 8.5° to 13.5° did not delimit against the prior art either.

4.3 The board does not agree with this assessment. First and foremost, claim 1 is directed to a product as such. Contrary to the line of argument presented by the appellant, the two aforementioned process features (neither of which is disclosed in D3) instead constitute *means* for achieving the *structural* limitation "molecular orientation coefficient ΔNx of 0.0130 to 0.0160". Both features have been demonstrated to be meaningful limitations for achieving this result. When the longitudinal stretching ratio exceeded a value of 4.7, the material properties worsened and a value of ΔNx as required was not achieved in Comparative Examples 2 and 4 of the patent with otherwise identical parameters (see Tables 1 and 2). Similarly, when working outside of the range for the lateral stretching angle of 8.5° to 13.5°, inferior film properties and a value of ΔNx falling outside of the claimed range were obtained. This can be derived from the results obtained for the films of Comparative Example 8 vs. the inventive examples. The aforementioned two process features are not therefore technically meaningless. Contrary to the line of argument presented by the appellant, the examples of the patent are considered reworkable and the parameter ΔNx is not ill-defined in the patent (see also corresponding comments above in relation to sufficiency of disclosure).

4.4 Furthermore, the appellant also stated (in the context of sufficiency of disclosure) that meeting the limitations in step 4 of claim 1 relating to longitudinal stretching ratio, lateral stretching angle and lateral stretching temperature does not necessarily result in films which exhibit ΔNx values as required in claim 1.

4.5 In view of this, the discussion of the case law on selection inventions referred to by the appellant is not relevant.

4.6 Therefore, the appellant failed to convincingly demonstrate that there is a strong presumption that the parameter ΔNx is inherently disclosed in the prior art (see CL, III.G.5.2.2.d, to which the opposition division also referred in its decision under appeal). There is no evidence of this, or at the very least no strong presumption that the films of claim 1 are structurally equivalent to those of D3.

4.7 It is thus concluded that the value range for ΔNx as defined in claim 1 is neither explicitly nor inherently achieved or disclosed in the embodiments of D3/D3a. Therefore, ΔNx constitutes a distinguishing technical feature, rendering the subject-matter of claim 1 novel vis-à-vis D3/D3a.

4.8 Similar considerations apply to the disclosure of document D6 (see filed English translation D6a), which was likewise adduced by the appellant against the novelty of the claimed subject-matter. D6 also lacks a direct and unambiguous disclosure of ΔNx values as specified in claim 1 as granted and of the aforementioned two process features. The subject-matter of claim 1 is thus novel over D6 as well.

4.9 Likewise, the subject-matter of the remaining claims, having all the features of claim 1, meets the requirements of Article 54(1) EPC.

5. Inventive step - main request

5.1 Patent

The technical problem as outlined in the patent was to provide a thin biaxially stretched polypropylene film which can be suitably deployed in a capacitor for use in, e.g., automobiles and which has excellent long-term durability at a high temperature and at a high voltage as well as being excellent in terms of film quality and productivity (see paragraph [0020] of the patent).

5.2 Closest prior art

The appellant identified document D3 as the closest prior art. The board agrees. Document D3 represents a suitable starting point for assessing inventive step. Like the patent, it is directed to the preparation of thin biaxially oriented polypropylene films that can be used as dielectric insulating layers of capacitors. Document D3 was also considered to be the closest prior art in the decision under appeal.

5.3 Distinguishing feature

The board agrees with the conclusion in the decision under appeal that at least the molecular orientation coefficient ΔNx as claimed establishes a distinguishing feature in claim 1.

5.4 Technical effects and resulting objective technical problem

5.4.1 The appellant contested the significance of the data provided in the patent. The examples of the patent could not be reworked and like was not being compared with like when comparing examples with the comparative examples. The examples of the patent could not be compared with the films of D3 either, these films differing from those featured in the examples of the patent. It was therefore impossible to attribute any advantages or effects only to the molecular orientation coefficient and it was impossible to generalise said advantages or effects. Consequently, in the absence of any advantages or effects achievable by the distinguishing feature, the problem to be solved was the provision of a mere alternative.

5.4.2 The board disagrees. As set out above, the examples are considered reproducible. As for the argument that like was not compared with like, the board takes the following stance: Example 1 can be compared with Comparative Example 1. It demonstrates the effect of increasing the lateral stretching temperature. Example 3 pairs with Comparative Example 3, while Comparative Example 4 shows the effect of increasing the longitudinal stretching ratio starting from Comparative Example 3. Similarly, Comparative Example 5 results from Example 5 by the lateral stretching temperature being lowered. Example 9 differs from Comparative Example 6 only in that the latter has an increased lateral stretching angle. Moreover, Examples 9 and 10 can be directly compared with Comparative Example 7. All these comparisons only involve the variation of one parameter at a time, keeping the polypropylene resin composition and film thickness constant.

5.4.3 The associated values of the molecular orientation coefficient in Table 2 of the patent demonstrate that keeping the values of this parameter within the claimed range results in an optimised balance of long-term durability at high temperatures and a high voltage within the context of use in a capacitor as well as improved film quality and production efficiency/ stability. As for the argument that the examples of the patent could not be directly compared with those of D3, the board comments as follows. It is true that the resin compositions employed in D3 differ in structural terms from those used in the examples of the patent. There is, however, no evidence that the aforementioned effects would not also be observed for resin compositions other than those tested in the patent. In this regard, Examples 10 and 11 employ resin compositions that differ from those used in the other inventive examples, but they likewise exhibit the aforementioned advantageous balance of properties compared with Comparative Example 7.

5.4.4 Similarly, the technical effects purported in the patent are also observed when varying the film thickness within the claimed range. Contrary to what was argued by the appellant, there is thus no information at hand showing that the results in the patent could not be generalised.

5.4.5 Consequently, despite the absence of direct comparative examples over the thin polypropylene films of D3, the board endorses the conclusions set out in points 7.12 and 7.13 of the decision under appeal. The opposition division held, and the board agrees, that the objective technical problem is to provide a polypropylene film that can be produced in a stable manner and provides

good long-term stability when used in a capacitor. This can be equated, in the view of the board, to improved products.

5.5 Obviousness

5.5.1 Since, for the reasons set out above, the objective technical problem formulated by the appellant is not accepted, the appellant's submissions regarding the obviousness of the claimed subject-matter based on that problem are also not persuasive.

5.5.2 Moreover, D3 does not provide, when taken separately or in combination with the secondary teaching of D4, the missing link for adjusting the molecular orientation coefficient ΔNx in order to solve the aforementioned objective technical problem. Already for this reason, the subject-matter of claim 1 is non-obvious in light of D3 to a person skilled in the art.

5.5.3 What is more, the technical disclosure of D4 appears to be incompatible with that of both the patent and D3. D4 relates to *diagonally* stretched polymer films rather than to *biaxially* stretched polypropylene films. Also for this reason, the board does not see how a modification of the teaching of D3 by the teaching of D4 could result in something falling within the scope of claim 1 in an obvious manner. Hence, when taking the disclosure of D4 into consideration, a skilled person would be bound by this choice. The resulting development would lead to films having a different molecular orientation of the polymer chains. Diagonally stretched films disclosed in the examples of D4 and D4a as an English translation thereof have a stretching angle and also an orientation angle of typically 45° - in contrast with biaxially stretched films having been

oriented/stretched at a lateral stretching angle as claimed in claim 1. It follows that the appellant's assertion that a skilled person consulting D4 would have applied the lowest stretching angle disclosed therein combined with the lowest lateral stretching temperature and the lowest longitudinal stretching ratio is not persuasive. Similarly, it follows from the above that, by combining the teaching of D3 with that of D4, a skilled person would not have arrived at a molecular orientation coefficient as claimed in claim 1.

The subject-matter of claim 1 thus involves an inventive step in view of D3 as a starting point for assessing inventive step. The remaining claims share the feature combination of claim 1, which was held to meet the requirements of Article 56 EPC.

6. To conclude, none of the objections put forward by the appellant prejudice the maintenance of the patent as amended on the basis of the main request.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

K. Götz-Wein A. Haderlein

Decision electronically authenticated