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Datasheet for the decision of 11 December 2012

Case Number: T 1473/10 - 3.3.07

Application Number: 00902978.6

Publication Number: 1097962

IPC: B01D 71/26, B01D 67/00

Language of the proceedings: EN

Title of invention:
Polyolefin microporous film and method for preparing the same

Patentee:
Toray Battery Separator Film Co., Ltd.

Opponent:
Treofan Germany GmbH & Co.KG

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
"Amendments - added subject-matter - main and first auxiliary requests (yes)"

Decisions cited:
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Catchword:
-

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Case Number: T 1473/10 - 3.3.07

D E C I S I O N
of the Technical Board of Appeal 3.3.07
of 11 December 2012

Appellant: (Patent Proprietor)
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Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 30 April 2010 concerning maintenance of European patent No. 1097962 in amended form.

Composition of the Board:

Chairman: J. Riolo
Members: D. Semino
M.-B. Tardo-Dino

Summary of Facts and Submissions

I. The appeal of the patent proprietor (appellant) lies against the decision of the opposition division announced at the oral proceedings on 9 March 2010 to maintain as amended European Patent 1 097 962. The granted patent comprised 15 claims, claim 1 reading as follows:

"1. A microporous polyolefin membrane, comprising (B) a composition containing 1% by weight or more of an ultra-high-molecular-weight polyolefin having a weight-average molecular weight of 5×10^5 or more, and having a porosity of 30 to 95%, bubble point exceeding 980 KPa and pin puncture strength of 6,860 mN/25 µm or more and tensile strength of 127,400 KPa or more."

II. A notice of opposition was filed against the granted patent requesting revocation of the patent in its entirety on the grounds of lack of novelty, lack of inventive step and insufficiency of disclosure, in accordance with Article 100(a) and (b) EPC.

III. The decision of the opposition division was based on claims 1 to 15 of the main request and claims 1 to 13 of the auxiliary request, both filed with letter of 30 September 2008, and on an adapted description filed during the oral proceedings on 9 March 2010.

Claim 1 according to the main request read as follows:

"1. A microporous polyolefin membrane, comprising (B) a composition containing 20 to 60 wt. parts of an ultra-high-molecular-weight polyolefin (B-1) having a weight-

average molecular weight of 5×10^5 or more and 40 to 80 wt. parts of a polyolefin (B-2) having a weight-average molecular weight of 1×10^4 or more but less than 5×10^5, and having a porosity of 30 to 95%, bubble point exceeding 980 KPa, a pin puncture strength of 6,860 mN/25 µm or more and tensile strength of 127,400 KPa or more."

Claim 1 according to the auxiliary request read as follows:

"1. A microporous polyolefin membrane, comprising (B) a composition containing an ultra-high-molecular-weight polyolefin having a weight-average molecular weight of 5×10^5 or more, and having a porosity of 30 to 95%, bubble point exceeding 980 KPa, a pin puncture strength of 6,860 mN/25 µn or more and tensile strength of 127,400 KPa or more, wherein said composition (B) containing an ultra-high-molecular-weight polyolefin having a weight-average molecular weight of 5×10^5 or more comprises an ultra-high-molecular-weight polyolefin (B-1) having a weight-average molecular weight of 1×10^6 or more and high-density polyolefin (B-2) having a weight-average molecular weight of 1×10^5 or more but less than 5×10^5, wherein 100 wt. parts of the composition (B) comprises 20 to 60 wt. parts of the polyolefin (B-1) and 40 to 80 wt. parts of the high-density polyethylene (B-2)."

IV. The decision of the opposition division, as far as relevant to the present decision, can be summarised as follows:

(a) Claim 1 of the main request did not comply with the requirements of Article 123(2) EPC, because the added feature "40 to 80 wt. parts of a polyolefin" had no basis in the original application where that quantity was disclosed only for high-density polyethylene.

(b) The objections under Article 100(b) EPC against the auxiliary request could not be followed by the opposition division. Moreover, claim 1 of the auxiliary request met the requirements of Article 84, was novel and was also inventive with respect to D2 (US-A-5 248 461), taken as the closest prior art, in view of the different quantities of the two polymers, the improvement in the membrane properties shown by the examples in the patent and the lack of a teaching in the prior art towards the claimed membranes.

V. The patent proprietor (appellant) appealed that decision. With the statement setting out the grounds of appeal dated 16 August 2010 it submitted three sets of claims and main, first auxiliary and second auxiliary requests.

The claims according to the main request and according to the second auxiliary request corresponded respectively to the claims according to the main request and according to the auxiliary request on which the decision was based. Claim 1 according to the first auxiliary request corresponded to claim 1 of the main request, wherein the term "polyolefin (B-2)" had been replaced by "high-density polyethylene (B-2)".

VI. In the reply to the statement setting out the grounds of appeal the opponent (respondent) maintained the objections of extension of the subject-matter beyond the content of the application as filed, lack of novelty and lack of inventive step.

VII. In a communication sent in preparation to oral proceedings the Board summarised the objections of the respondent and expressed in particular its doubts concerning fulfilment of the requirement of Article 123(2) EPC.

VIII. Oral proceedings were held on 11 December 2012.

IX. The arguments of the appellant (patent proprietor), as far as relevant to the present decision, can be summarised as follows:

Amendments

(a) Claim 1 of the main request was based on claims 1, 3 and 11 as granted (claims 1, 3, 7 and 12 of the application as originally filed), on the paragraph bridging pages 4 and 5 of the description as originally filed and on the following paragraph on page 5. When those paragraphs were read in combination, it became obvious that the ranges mentioned for high-density polyethylene ("40 to 80 wt. parts") also applied to other polyolefins and that high-density polyethylene was only a preferred option. Moreover, the polymer (B-1) of the composition comprising two polyolefins corresponded to the ultra-high molecular weight polyolefin of composition (B), for which a weight-

average molecular weight of 5×10^5 or more was disclosed in the first sentence of the paragraph bridging pages 4 and 5 of the original description.

(b) The same arguments applied to the first auxiliary request, where in addition the term "polyolefin" had been further specified to "high-density polyethylene" as in original claim 12 and in the last sentence of the first full paragraph of page 5 of the original description. That amendment rendered the objection of the opposition division moot.

X. The arguments of the respondent (opponent), as far as relevant to the present decision, can be summarised as follows:

Amendments

(a) The range "40 to 80 wt. parts" was disclosed both in the original claims and on pages 4 and 5 of the original description with reference to a specific high-density polyethylene and not to a generic polyolefin (B-2). Moreover, in the compositions comprising two polymers (B-1) and (B-2) the polymer (B-1) had a weight-average molecular weight of 1×10^6 or more. Therefore, both the generalisation of the term high-density polyethylene to polyolefin and the introduction of the range 5×10^5 or more for the weight-average molecular weight of polymer (B-1) had no basis in the original application, so that claim 1 of the main request did not meet the requirements of Article 123(2) EPC.

(b) The specification of high-density polyethylene as polymer (B-2) in claim 1 of the first auxiliary request did not solve the issue related to the range of the weight-average molecular weight of polymer (B-1), so that the same objection as detailed for the main request applied.

XI. The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent maintained on the basis of the claims of the main request or of the first auxiliary request, both filed with the statement of grounds.

XII. The respondent (opponent) requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Amendments*

2.1 Compared to claim 1 as granted (see point I, above) relating to a membrane comprising a composition containing a polyolefin having a weight-average molecular weight of 5×10^5 or more, claim 1 of the main request (see point III, above) is limited to the embodiment where the composition contains two polyolefins, the first one (indicated as (B-1)) having a higher weight-average molecular weight than the

second one (indicated as (B-2)). Specific ranges are given in claim 1 for the weight-average molecular weights and for the quantities of (B-1) and (B-2).

2.2 The embodiment including a polyolefin (B-1) and a polyolefin (B-2) is disclosed in the paragraph bridging pages 4 and 5 of the original description, the first full paragraph of page 5 and original claims 3 and 12. Moreover, all examples in the application as filed include a polyolefin (B-1) and a polyolefin (B-2).

2.3 In all cited instances the polyolefin (B-1) has a weight-average molecular weight of 1×10^6 or more and the polyolefin (B-2) has a weight-average molecular weight of less than 1×10^6 (page 4, lines 21 to 26; page 5, lines 13 to 21; claims 3 and 12); higher values for the weight-average molecular weight of polyolefin (B-1) and lower ones for polyolefin (B-2) are indicated in the preferred embodiments, wherein in particular in the claimed ones (claims 3 and 12) a neater separation (as is physically reasonable to define two clearly distinct polymers) is indicated with the weight-average molecular weight of (B-1) at 1×10^6 or more and the weight-average molecular weight of (B-2) between 1×10^5 and 5×10^5. In all cases the value of 1×10^6 is indicated and understood as the discriminating value between the weight-average molecular weights of the two polyolefins. This is confirmed also by all of the examples (pages 16 and following, in particular tables 1 to 3 in the original description), wherein the weight-average molecular weight of (B-1) is always above 1×10^6 (a typical value of 2×10^6 is used) and the weight-average molecular weight of (B-2) is always below 1×10^6 (a typical value of 3.5×10^5 is used).

2.4 Differently from that teaching, in claim 1 of the main request polyolefin (B-1) is defined as having a weight-average molecular weight of 5×10^5 or more and the weight-average molecular weight of polyolefin (B-2) is in the range of 1×10^4 or more but less than 5×10^5.

2.5 Such a choice results in the combination of the most general range of weight-average molecular weight for the case in which a single olefin is present in the composition (5×10^5 or more, see original claim 1 and page 4, lines 19 to 21), which is attributed to one of the polyolefins of the embodiment where two polyolefins are present (polyolefin (B-1)), with a preferred range of that embodiment for the polyolefin (B-2) (page 4, lines 24 to 26), which combination is not disclosed in the application as originally filed and is in disagreement with the consistent teaching therein that, when two polyolefins (B-1) and (B-2) with different weight-average molecular weights are present, the discriminating value for the weight-average molecular weight is 1×10^6.

2.6 For this reason claim 1 of the main request extends beyond the content of the application as filed contrary to the requirements of Article 123(2) EPC.

2.7 In addition to that claim 1 of the main request specifies the relative quantities of polyolefins (B-1) and (B-2) as being 20 to 60 wt. parts and 40 to 80 wt. parts respectively. With regard to that the Board agrees with the opposition division that a basis for these quantities is available in the original application only for the case in which (B-2) is high-

density polyethylene (page 5, lines 21 to 23 and claim 12) and no basis for the generalisation of these quantities to (B-2) being a polyolefin is present. In any case, as claim 1 of the main request does not already meet the requirements of Article 123(2) EPC for other reasons (points 2.1 to 2.6, above), it is not necessary to analyse the issue in any further detail.

First auxiliary request

3. *Amendments*

3.1 Claim 1 of the first auxiliary request differs from claim 1 of the main request only in that the term "polyolefin (B-2)" has been replaced by "high-density polyethylene (B-2)".

3.2 While this amendment solves the issue regarding the relative quantities of the two polymers (point 2.7, above), it has no impact on the first objection on the basis of which claim 1 of the main request has been found not to meet the requirements of Article 123(2) EPC (points 2.1 to 2.6, above).

3.3 Therefore claim 1 of the first auxiliary request does not meet the requirements of Article 123(2) EPC for the same reasons as detailed for claim 1 of the main request (points 2.1 to 2.6, above).

4. As claim 1 according to the main and to the first auxiliary requests extends beyond the content of the original application as filed, there is no need for the Board to decide on any other issue concerning these requests. In addition, there is no need to consider the

second auxiliary request corresponding to the claims as maintained by the opposition division, as the patent proprietor was the sole appellant.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar The Chairman

S. Fabiani J. Riolo