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Datasheet for the decision of 3 May 2018

Case Number: T 0119/15 - 3.2.01

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Language of the proceedings: EN

Title of invention:

Polymer laminate and pneumatic tire using the same as inner liner

Patent Proprietor:

Sumitomo Rubber Industries, Ltd.

Opponent:

MICHELIN Recherche et Technique S.A.

Headword:

Relevant legal provisions:

EPC Art. 123(2)
RPBA Art. 13(1)

Keyword:
Added subject-matter (yes)
Admissibility of late filed auxiliary request (no)

Decisions cited:
T 1511/07

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 0119/15 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 3 May 2018

Appellant: (Opponent)	MICHELIN Recherche et Technique S.A. Route Louis Braille 10 1763 Granges-Paccot (CH)
Representative:	Sidhu, Alban Manufacture Française des Pneumatiques Michelin CBS/CORP/J/PI - F35 - Ladoux 23, place des Carmes-Déchaux 63040 Clermont-Ferrand Cedex 9 (FR)
Respondent: (Patent Proprietor)	Sumitomo Rubber Industries, Ltd. 6-9, Wakinohama-cho 3-chome Chuo-ku Kobe-shi, Hyogo 651-0072 (JP)
Representative:	Manitz Finsterwald Patentanwälte PartmbB Postfach 31 02 20 80102 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 14 November 2014 rejecting the opposition filed against European patent No. 2298577 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	G. Pricolo
Members:	C. Narcisi
	P. Guntz

Summary of Facts and Submissions

I. The Opposition against European patent No. 2 298 577 was rejected and the patent was maintained as granted by the decision of the Opposition Division posted on 14 November 2014. Against the decision an appeal was lodged by the Opponent on 19 January 2015 and the appeal fee was paid. The statement of grounds of appeal was filed on 23 March 2015.

II. Oral proceedings took place on 3 May 2018. The Appellant (Opponent) requested that the decision under appeal be set aside and that the patent be revoked. The Respondent (Patentee) requested that the appeal be dismissed and that the patent be maintained as granted (main request) or, in the alternative, that a question (see below) be referred to the Enlarged Board of Appeal, or that the patent be maintained in amended form on the basis of auxiliary requests 1 to 4 (filed on 4 August 2015), or on the basis of auxiliary request 5 (filed on 3 April 2018).

III. Granted claim 1 reads as follows:

"A polymer laminate (10c) comprising:
a first layer (11c) having a thickness of 0.05 mm to 0.6 mm made of a styrene-isobutylene styrene triblock copolymer, wherein the molar ratio of the isobutylene units to the styrene units of the styrene-isobutylene-styrene triblock copolymer is from 40/60 to 95/5, and
a second layer (12c, 13c) containing at least one of a styrene-isoprene-styrene triblock copolymer and a styrene-isobutylene diblock copolymer, wherein the molar ratio of the isoprene units to the styrene units of the styrene-isoprene-styrene triblock copolymer is from 90/10 to 70/30 and the molar ratio of the

isobutylene units to the styrene units of the isobutylene-styrene diblock copolymer is from 90/10 to 65/35, wherein said second layer (12c, 13c) has a thickness of 0.01 mm to 0.3 mm".

In auxiliary request 1 only dependent claims 2 to 4 were deleted, claim 1 staying unchanged.

In claim 1 of auxiliary request 2 the feature reading "wherein said second layer (12c, 13c) has a thickness of 0.01 mm to 0.3 mm" is replaced by "wherein said second layer (12c, 13c) has a thickness of 0.05 to 0.2 mm".

Claim 1 of auxiliary request 3 reads as follows:

"A polymer laminate (10c) comprising:
a first layer (11c) having a thickness of 0.05 mm to 0.6 mm made of a styrene-isobutylene styrene triblock copolymer, wherein the molar ratio of the isobutylene units to the styrene units of the styrene-isobutylene-styrene triblock copolymer is from 40/60 to 95/5, and
a second layer (12c, 13c) containing a styrene-isoprene-styrene triblock copolymer, wherein the molar ratio of the isoprene units to the styrene units of the styrene-isoprene-styrene triblock copolymer is from 90/10 to 70/30, wherein said second layer (12c, 13c) has a thickness of 0.01 mm to 0.3 mm"

Claim 1 of auxiliary request 4 is based on claim 1 of auxiliary request 3, differing therefrom only in that the feature reading "wherein said second layer (12c, 13c) has a thickness of 0.01 mm to 0.3 mm" is replaced by "wherein said second layer (12c, 13c) has a thickness 0.05 mm to 0.2 mm".

Claim 1 of auxiliary request 5 reads as follows:

"A polymer laminate (10c) comprising:
a first layer (11c) having a thickness of 0.05 mm to 0.6 mm made of a styrene-isobutylene styrene triblock copolymer, wherein the molar ratio of the isobutylene units to the styrene units of the styrene-isobutylene-styrene triblock copolymer is from 40/60 to 95/5, wherein in the styrene-isobutylene-styrene triblock copolymer, the polymerization degree of each block is from 10000 to 150000 for an isobutylene block, or from 5000 to 30000 for a styrene block, and
a second layer (12c, 13c) containing at least one of a styrene-isoprene-styrene triblock copolymer and a styrene-isobutylene diblock copolymer, wherein the molar ratio of the isoprene units to the styrene units of the styrene-isoprene-styrene triblock copolymer is from 90/10 to 70/30, wherein in the styrene-isoprene-styrene triblock copolymer, the polymerization degree of each block is from 500 to 5000 for an isoprene block, or from 50 to 1500 for a styrene block, and the molar ratio of the isobutylene units to the styrene units of the isobutylene-styrene diblock copolymer is from 90/10 to 65/35, wherein in the styrene-isobutylene diblock copolymer, the polymerization degree of each block is from 300 to 3000 for an isobutylene block, or from 10 to 1500 for a styrene block,
wherein said second layer (12c, 13c) has a thickness of 0.01 mm to 0.3 mm".

IV. The Appellant's arguments may be summarized as follows:

The subject-matter of claim 1 (main request) extends beyond the content of the patent application as filed, contravening the requirements of Article 123(2) EPC. Granted claim 1 was derived from claim 1 as filed by adding three different features implying that "the molar ratio of the isobutylene units to the styrene units of the styrene-isobutylene-styrene (SIBS) triblock copolymer is from 40/60 to 95/5", that "the molar ratio of the isoprene units to the styrene units of the styrene-isoprene-styrene triblock copolymer (SIS) is from 90/10 to 70/30" and that "the molar ratio of the isobutylene units to the styrene units of the isobutylene-styrene diblock copolymer (SIB) is from 90/10 to 65/35". These features were respectively extracted from various different paragraphs of the application as filed, corresponding to paragraphs [0024], [0034] and [0041] of the published patent application (hereinafter designated as EP-A).
However the above features specifying molar ratios of SIBS, SIS and SIB amount to an arbitrary choice among other possible choices of parameters for said copolymers SIBS, SIS and SIB, these parameters including for each copolymer the weight averaged molecular weight, the content (in percentage) of styrene by weight, the molar ratio isobutylene/styrene (or isoprene/styrene) and the polymerisation degree. The values (or ranges) for all these (four) parameters are specified in EP-A in paragraphs [0022]-[0024] for SIBS, [0032]-[0034] for SIS, [0039]-[0041] for SIB. In said paragraphs all these twelve ranges are disclosed as being "preferred", the three ranges relating to the molar ratios not being disclosed as more or most preferred (as compared to any of the other nine ranges related to the other three parameters).

Moreover there is no specific technical effect disclosed in EP-A making the link between the molar ratios of all three copolymers. Indeed, considering e.g. the elasticity of the resulting polymer laminate (comprising said three copolymers) as suggested by the Patentee, for the copolymers SIS (see [0034]) and SIB ([0041]) there is in EP-A no indicated technical effect associated with the preferred choice of molar ratios. By contrast, for the copolymers SIS and SIB, elasticity is mentioned (in the same paragraph) only in conjunction with the preferred choice of polymerization degree, thus pointing here for SIS and SIB to a choice or selection of the polymerization degree rather than of molar ratios.

Consequently, the aforementioned combination of molar ratios in granted claim 1 introduces subject-matter not disclosed in the application as filed.

Decision T 1511/07 confirms that it is only possible to combine preferred choices if a link is made between these preferred choices in the application's disclosure, a clear pointer thereby resulting to such a combination. Further, this decision also states that it is not possible to form arbitrary combinations of parameter ranges included in different "lists".

The subject-matter of claim 1 of auxiliary requests 1 to 4, similarly to granted claim 1, includes subject-matter extending beyond the content of the application as filed.

Auxiliary request 5 should not be admitted into the appeal proceedings since it was late filed and it is clearly not allowable. The amendments (of claim 1)

result in further objections relating to clarity (Article 84 EPC), to whether or not the disclosure is sufficiently clear and complete such that the skilled person would be able to perform the invention (Article 83 EPC), and to the introduction of subject-matter not originally disclosed (Article 123(2) EPC. For instance, the value range for the polymerization degree of the isobutylene block of SIBS indicated in claim 1 is at odds with the weight averaged molecular weight of SIBS disclosed in EP-B (see paragraph [0023]). In effect, from the polymerization degree of the isobutylene block indicated in paragraph [0024] of EP-A a preferred value range of at least 560000 g/mole to 8400000 g/mole would result for SIBS (taking into account also the styrene block a range lower value of 1000000 g/mole would result instead of 560000 g/mole), in marked contrast with a value range of 50000 to 400000 g/mole specified in [0022] of EP-A. Moreover all the specific examples given in EP-A based on paragraphs [0060] to [0069] would also not anymore fall within the scope of claim 1. Thus claim 1 would not be supported by the description, contrary to Article 84 EPC.

V. The Respondent's arguments may be summarized as follows:

The subject-matter of claim 1 was disclosed in the application as filed. The person skilled in the art knows that the properties of a copolymer strongly depend on the molar ratio of the single monomers of the copolymer, and this holds true also for SIBS, SIS and SIB. The preferred values and ranges indicated in the mentioned paragraphs of EP-A (relating to SIBS, SIS and SIB) represent different and distinct features, which of course are not all disclosed in combination.

Nonetheless, the skilled person knows that the single molar ratios of the monomers of the copolymers disclosed in EP-A are preferably fulfilled for all three copolymers of both layers of the laminate in combination with each other.
In addition, it follows from EP-A that the preferred molar monomer ratios for the three polymers of the polymer laminate all serve the same purpose, i.e. to obtain a required rubber elasticity. This is explicitly derivable from all three relevant paragraphs [0024], [0034], and [0041] of EP-A. These paragraphs demonstrate that the preferred molar monomer ratios mentioned therein, as well as the preferred block polymerization degrees mentioned therein, are important in view of the rubber elasticity of the copolymer. This applies regardless of the elasticity effect being mentioned only at the end of paragraphs [0034], [0041] in EP-A, i.e. not directly in conjunction with the molar ratios of SIS and SIB but with the polymerization degree of SIS and SIB.

The case law according to decision T 1511/07 cannot be applied here, for in the present case no different lists are present, particularly not for any of the single physical parameters indicated. Indeed, for the molar ratios, as well as for the other parameters, only one numerical value range is given. Also, the present invention is directed to optimization of the technical properties of a polymer laminate and not to different lists of substances forming a chemical compound.

In the event that the Board should not allow the main request it is requested that the following question be referred to the Enlarged Board of Appeal:

"Are preferred value ranges of different parameters characterizing an object and being disclosed independently from each other to be regarded as a list, and is therefore the choice of one parameter equivalent to a selection from a list, according to the two-list principle?".

("Sind bevorzugte Bereiche verschiedener Parameter, die einen Gegenstand näher charakterisieren und unabhängig voneinander offenbart sind als eine Liste anzusehen, sodass das Herausgreifen eines Parameters als eine Auswahl aus einer Liste gemäss dem 2-Listen-Prinzip anzusehen ist?").

Claim 1 of auxiliary requests 1, 2, 3 and 4 does not include subject-matter extending beyond the content of the application as filed, for the same reasons as stated in conjunction with claim 1 of the main request.

Auxiliary request 5 should be admitted into the appeal proceedings, given that it addresses the objections raised by the Appellant as discussed hereinbefore and clearly overcomes said objections. In particular, the amendment including the polymerization degree leads to compliance with the requirements of Article 123(2) EPC, no subject-matter extending beyond the content of the application as filed (added subject-matter) being included in claim 1. The Appellant's objections based on lack of clarity of claim 1 and lack of a sufficiently clear and complete disclosure (Article 83 EPC) of the invention in the patent specification (hereinafter designated as EP-B) are unfounded. Indeed, the subject-matter of claim 1 is clear in itself and the skilled person would also be able to put it into practice. The alleged inconsistencies and ambiguities in the description of EP-B supposedly leading to lack

of support for the claimed subject-matter and rendering this subject-matter unclear were not sufficiently proved. The numerical value ranges for the polymerization degree of an isobutylene block in the copolymer SIBS indicated in claim 1 are not at odds with the numerical range for the weight averaged molecular weight of SIBS indicated in the description (see EP-B, [0023]), these parameter ranges not necessarily having to coincide or being identical and not representing necessarily the same embodiments. Moreover, even on the assumption that inconsistencies do exist in the patent's disclosure, the description could be adapted to claim 1 by deleting the passages concerned and, if necessary, by deleting some of the examples given in the description of EP-B not falling any more within the scope of claim 1. Claim 1 in conjunction with the residual parts of the description would still give a sufficiently clear and complete disclosure of the invention producing the technical effects and advantages illustrated and detailed in EP-B (or EP-A).

Reasons for the Decision

1. The appeal is admissible.

2. The subject-matter of claim 1 (main request) infringes Article 123(2) EPC since it extends beyond the content of the application as filed.
In the Board's judgement the features implying that "the molar ratio of the isobutylene units to the styrene units of the styrene-isobutylene-styrene (SIBS) triblock copolymer is from 40/60 to 95/5" (hereinafter designated as feature (i)) , that "the molar ratio of

the isoprene units to the styrene units of the styrene-isoprene-styrene triblock copolymer (SIS) is from 90/10 to 70/30" (hereinafter designated as feature (ii)) and that "the molar ratio of the isobutylene units to the styrene units of the isobutylene-styrene diblock copolymer (SIB) is from 90/10 to 65/35" (hereinafter designated as feature (iii)) were not disclosed in combination as constituting a preferred feature in the application as filed and therefore the selection of the molar ratios for SIBS, SIS and SIB in combination (included in the subject-matter of claim 1) is not permissible.

Claim 1 is directed to a polymer laminate comprising a first and a second layer, the first layer being made of the copolymer SIBS and the second layer of the copolymer SIS and/or SIB. The invention has the object of providing a polymer laminate for use in a pneumatic tire, said laminate having an excellent air permeation resistance and adhesion with an adjacent rubber (EP-A, [0014]). The first layer is specifically designed to obtain said air permeation resistance [EP-A, [0019]), whereas the second layer is specifically designed to obtain said adhesion (EP-A, [0031], [0037]). The copolymer SIBS used in the first layer is described in (set of) paragraphs [0018]-[0029] of EP-A, the copolymers SIS and SIB used in the second layer are described respectively in (sets of) paragraphs [0031]-[0036] and [0037]-[0044] of EP-A. Preferred value ranges for the weight averaged molecular weight, the percentage content by mass of styrene, the molar ratio of an isobutylene (or isoprene) unit to a styrene unit and the polymerization degree of each block are given in the corresponding set of said paragraphs relating respectively to SIBS, SIS or SIB. The preferred ranges are each disclosed as individually preferred value

ranges, no specific combination of preferred ranges being (explicitly or implicitly) indicated or suggested in EP-A. EP-A nevertheless specifies or suggests that in view of obtaining desired elasticity properties (of the polymer laminate) the preferred range of weight averaged molecular weight for SIBS, SIS and SIB (see [0022], [0032], [0039] in EP-A), of molar ratio for SIBS (see [0024] in EP-A), of polymerization degree for SIBS, SIS and SIB (see [0022], [0034], [0039]), and of percentage content by mass of styrene for SIS and SIB (see [0033], [0040]) should be selected.

In view of the above it follows that the subject-matter of claim 1 cannot be derived directly and unambiguously from the application as filed (EP-A). Since all preferred value ranges mentioned above are disclosed in EP-A only as preferred ranges the skilled person would only deduce that each of them can be individually selected. However, no combination of such value ranges is indicated as preferred and this applies in particular to the combination of the molar ratios according to features (i) to (iii). Further, no link is made (explicitly or implicitly) in EP-A between he preferred value ranges of the molar ratios, hence no such link permits to distinguish between this specific combination of preferred value ranges and other possible combinations. Also, there would be no reason on the basis of common general knowledge for the skilled person to select the specific combination of the molar ratios, for the polymer laminate includes said copolymer SIBS in the first layer and said copolymers SIS and/or SIB in the second layer, wherein said layers fulfil a different physical function (air permeation resistance vs. adhesion). Consequently, the layers being different and having essentially different physical functions, there would be a priori no reason

for the skilled person to select the preferred value ranges of one and the same parameter (i.e. molar ratio) for all said copolymers.
Further, even on the assumption that the elasticity effect is a valid criterion for making a link between various different preferred value ranges, said elasticity effect may at best only contribute to select a combination of preferred value ranges (see hereinabove) including molar ratio (for SIBS), weight averaged molecular weight (for SIBS, SIS and SIB), polymerization degree (for SIBS, SIS and SIB) and percentage content by mass of styrene (for SIS and SIB). Thus, no combination of preferred value ranges including only molar ratios is explicitly or implicitly disclosed or suggested in EP-A, even when considering the aim of obtaining desired elasticity properties as being one of the main aspects of the invention.
Finally, contrary to the Respondent's view, it is nowhere stated or suggested in EP-A that the selection of said molar ratios would imply that said elasticity effect is obtained and no evidence was provided that this would result from common general knowledge. Quite to the contrary, it can be deduced from EP-A (and EP-B) that a proper selection of e.g. the polymerization degree and (weight) averaged molecular weight of (of specific blocks) of these copolymers is necessary to obtain the desired physical properties and effects (see EP-A, [0022], [0024], [0032], [0034], [0039], [0041]). Thus, the combination of features (i) to (iii) does not directly and unambiguously result from the disclosure of EP-A.

A similar and equivalent reasoning applies to the selection of the combination of preferred value ranges according to aforesaid features (i) and (ii) or (i) and (iii) (see claim 1 of auxiliary requests 3 and 4).

The Board also considers that decision T 1511/07 does not apply to the present case. In effect, claim 1 in case T 1511/07 is directed to a chemical compound ("a metastable calcium complex"), whereas present claim 1 is directed to a polymer laminate, which is a mechanical item including different mechanical components, such as different copolymer layers having mechanical or physical properties. Further, in the present case the preferred value ranges represent various technical features of each (SIBS, SIS, or SIB) copolymer layer, with these features for each copolymer layer independently defining an object different from the object defined by the features pertaining to a different copolymer layer. By contrast, the "lists" discussed in decision T 1511/07 all pertain to one and the same chemical compound or object, thus no equivalence or analogy being given with the preferred value ranges indicated in EP-A, which cannot be considered as "lists" within the meaning of T 1511/07.

3. The Board decided not to refer the Appellant's question to the Enlarged Board of Appeal, as it came to the conclusion (see point 2) that the case law according to decision T 1511/07 is not relevant for the present case and that the two-list principle (mentioned by the Respondent in its request concerning referral of a question to the Enlarged Board of Appeal) cannot be applied in the present case, which bases on a specific combination of features not being disclosed in the application as filed, as explained above (see point 2).

4. For the reasons set out hereinabove the subject-matter of claim 1 of auxiliary requests 1 to 4 extends beyond

the content of the application as filed (Article 123(2) EPC).

5. The Board decided to exercise its discretionary power pursuant to Article 13(1) RPBA (Rules of Procedure of the Boards of Appeal) not to admit the Respondent's auxiliary request 5 into the appeal proceedings. Auxiliary request 5, filed one month before oral proceedings, was not submitted in response to any specific new arguments put forward by the Appellant or in response to the Board's communication. In particular, the Board's communication merely summarized the main issues to be discussed during oral proceedings. Thus, auxiliary request 5 should have been submitted earlier and was filed belatedly.
It was considered that claim 1 of auxiliary request 5 was not prima facie clearly allowable in view of the Appellant's objections based on Article 84 EPC, 83 EPC and Article 123(2) EPC. As was rendered evident by the discussion during oral proceedings (see arguments of the parties, points IV and V), the outstanding objections raise complex questions, particularly concerning clarity of the claimed subject-matter and its support in the description, sufficiency of disclosure, as well as concerning the issue of whether or not subject-matter extending beyond the content of EP-A was included in amended claim 1. At this late stage of the proceedings the Board saw no valid reasons for admitting this auxiliary request, given that in all likelihood the amendments introduced could not be expected to overcome all the objections put forward by the Appellant.

Order

For these reasons it is decided that:

1. The appealed decision is set aside.

2. The request to refer a question to the Enlarged Board of Appeal is rejected.

3. The patent is revoked.

The Registrar: The Chairman:

A. Vottner G. Pricolo

Decision electronically authenticated