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**Datasheet for the decision  
of 16 August 2006**

**Case Number:** T 0193/04 - 3.3.09

**Application Number:** 95944350.8

**Publication Number:** 0799131

**IPC:** B32B 27/12

**Language of the proceedings:** EN

**Title of invention:**

Mechanically compatibilized film/nonwoven laminates

**Patentee:**

KIMBERLY-CLARK WORLDWIDE, INC.

**Opponents:**

Trioplanex International AB  
SCA Hygiene Products AB

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 54, 83

**Keyword:**

"Main request (novelty - no)"

"First to fourth auxiliary requests (sufficiency - no)"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 0193/04 - 3.3.09

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.09  
of 16 August 2006

**Appellant:**

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**Respondent:**

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**Decision under appeal:**

Decision of the Opposition Division of the  
European Patent Office posted 5 December 2003  
rejecting the opposition filed against European  
patent No. 0799131 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** P. Kitzmantel  
**Members:** J. Jardon Alvarez  
W. Sekretaruk

## Summary of Facts and Submissions

I. The grant of European patent No. 0 799 131 in respect of European patent application No. 95 944 350.8 in the name of KIMBERLY-CLARK WORLDWIDE, INC., which had been filed on 19 December 1995, was announced on 31 October 2001 (Bulletin 2001/44) on the basis of 19 claims. Claim 1 read as follows:

"1. A film/support laminate comprising:

a film layer (12) and a support layer (14) laminated to one another to form a film/support laminate (10), said film layer (12) having a machine direction and a cross machine direction, said support layer (14) having a machine direction and a cross machine direction and said laminate (10) having a machine direction and a cross machine direction, said film having been oriented in said machine direction prior to being laminated to said support layer (14), said film having an effective thickness of about 13  $\mu\text{m}$  or less, said film layer (12) after machine direction orientation and lamination defining a film elongation at break value in said cross machine direction, said support layer defining a support elongation at peak load value in said cross machine direction and said laminate defining an elongation at peak load value in said cross machine direction, said film elongation at break value in said cross machine direction being greater than said support elongation at peak load value in said cross machine direction, said film layer (12) defining a film peak load value in said cross machine direction, said support layer (14) defining a support peak load value in said cross

machine direction, said laminate defining a laminate peak load value in said cross machine direction, said support peak load value in said cross machine direction being greater than said film peak load value in said cross machine direction and said film peak load value in said cross machine direction being less than said laminate peak load value in said cross machine direction, said laminate peak load value in said cross machine direction being at least 300 grams when measured by tensile test Method 5102 Federal Test methods Standard No. 191A at a 2.54 cm x 15.24 cm (1 x 6 inch) laminate strip with the cross machine direction running parallel to the 15.24 cm (6 inch) length, said film layer (12) and said support layer (14) were aligned prior to lamination such that the machine direction orientation of each layer (12, 14) was parallel to one another."

II. Two Notices of Opposition requesting the revocation of the patent in its entirety on the grounds of Article 100(a), (b) and (c) EPC were filed against this patent by:

Trioplanex International AB (Opponent I) on 24 July 2002 and by

SCA Hygiene Products AB (Opponent II) on 26 July 2002.

The oppositions were *inter alia* supported by the following documents:

D1: US - 4 929 303

D2 US - 4 606 970

D4: GB - A - 2 155 853

III. By its decision announced orally on 11 November 2003 and issued in writing on 5 December 2003, the Opposition Division rejected the oppositions.

The Opposition Division held that the application disclosed the invention in a manner sufficiently clear and complete for it to be carried out by the skilled person. It would be clear for the skilled person that Claim 6 did not make sense in combination with Claim 5 but only in combination with Claim 4. The wrong dependency of Claim 6 made it unclear (Article 84 EPC) but it did not render the claimed subject-matter insufficiently disclosed (Article 83 EPC).

The Opposition Division further acknowledged the novelty of the claimed subject-matter because neither D1 nor D2 disclosed directly and unambiguously an embodiment falling within the scope of Claim 1 of the patent. In its opinion it required a lot of assumptions and hypothetical explanations to arrive at the subject-matter of Claim 1 from the disclosure of D1.

Concerning inventive step, the Opposition Division saw the problem to be solved with regard to the closest prior art, D1, as how to provide an improved film/support laminate for personal care absorbent articles wherein the film would not fail prematurely when subjected to forces directed in the cross machine direction, even if the film had been oriented in the

machine direction for making it thinner. The solution to this problem, namely the laminates according to Claim 1, could not be deduced from the available prior art and therefore the claimed subject-matter was regarded as involving an inventive step.

- IV. On 5 February 2004 the Opponent II (Appellant) lodged an appeal against the decision of the Opposition Division and paid the appeal fee on the same day.

In the Statement of Grounds of Appeal filed on 7 April 2004, the Appellant requested the revocation of the patent in its entirety on the grounds of insufficient disclosure (Article 100(b) EPC) and lack of novelty and inventive step (Article 100(a) EPC).

By letter dated 14 July 2006, the Appellant filed further arguments in support of its objections.

- V. The Respondent (Patent Proprietor) presented its arguments in written submissions dated 25 October 2004 and 14 July 2006. The Respondent disputed all the arguments submitted by the Appellant and requested that the appeal be dismissed (main request). It also submitted with the letter dated 14 July 2006 sets of claims for seven auxiliary requests in case the main request was not allowed.

- VI. Opponent I, a party as of right to the appeal proceedings, did not file any substantive submissions during the present appeal proceedings.

- VII. During the oral proceedings held on 16 August 2006, after the discussion on novelty of the main request,

the Respondent withdrew its previous auxiliary requests and filed new sets of claims for four auxiliary requests.

Claim 1 of the first auxiliary request reads as follows:

"1. A method for producing a film/support laminate comprising:

providing a film layer (12) and a support layer (14) each having a machine direction and a cross machine direction

aligning said film layer and said support layer such that the machine direction orientation of each layer is parallel to one another, and

laminating said film layer and said support layer to form the film support laminate (10),

said laminate (10) having a machine direction and a cross machine direction, said film having been oriented in said machine direction prior to being laminated to said support layer (14), said film having an effective thickness of about 13  $\mu\text{m}$  or less,

said film layer (12) after machine direction orientation and lamination defining a film elongation at break value in said cross machine direction, said support layer defining a support elongation at peak load value in said cross machine direction and said laminate defining an elongation at peak load value in said cross machine direction, said film elongation at break value in said cross machine direction being greater than said support elongation at peak load value in said cross machine direction,

said film layer (12) defining a film peak load value in said cross machine direction, said support layer (14) defining a support peak load value in said cross machine direction, said laminate defining a laminate peak load value in said cross machine direction, said support peak load value in said cross machine direction being greater than said film peak load value in said cross machine direction and said film peak load value in said cross machine direction being less than said laminate peak load value in said cross machine direction, said laminate peak load value in said cross machine direction being at least 300 grams when measured by tensile test Method 5102 Federal Test methods Standard No. 191A at a 2.54 cm x 15.24 cm (1 x 6 inch) laminate strip with the cross machine direction running parallel to the 15.24 cm (6 inch) length."

Compared to the first auxiliary request, the following amendments were made to Claims 1 of the further auxiliary requests:

- Auxiliary request 2. Claim 1 is identical to Claim 1 of the first auxiliary request except that the support layer now consists of a "nonwoven layer".
- Auxiliary request 3. Claim 1 of this request is based on Claim 1 of the second auxiliary request with the additional requirement that the nonwoven layer comprises a spunbond nonwoven web.
- Auxiliary request 4. Claim 1 of this request is based on Claim 1 of the first auxiliary request



with the additional feature that the film layer is described as "being formed by film forming polymers which include homopolymers of polyolefin, copolymers of polyolefins, blends of polyolefins, as well as ethylene vinyl acetate (EVA), ethylene ethyl acrylate (EEA), ethylene acrylic acid (EAA), ethylene methyl acrylate (EMA), ethylene butyl acrylate (EBA), polyester (PET), nylon (PA), ethylene vinyl alcohol (EVOH), polystyrene (PS), polyurethane (PU) and olefinic thermoplastic elastomers which are multi-step reactor products wherein an amorphous ethylene propylene random copolymer is molecularly dispersed in a predominately semicrystalline high polypropylene monomer/low ethylene monomer continuous matrix."

VIII. The arguments presented by the Appellant in its written submissions and at the oral proceedings may be summarized as follows:

- The Appellant argued that the subject-matter of the claims lacked novelty having regard to the documents D1, D2 and D4. Each of these documents disclosed all the features of Claim 1 of the main request, at least implicitly. Moreover the claimed subject-matter lacked inventive step over these documents. In particular the skilled person faced with the problem of providing a laminate of which the film was less likely to rupture upon application of a force would find the solution in D4, which already addressed the same problem and proposed the same solution, namely to allow the film elongation to be greater than the support elongation.

- The Appellant argued further that the patent did not describe the invention in a manner sufficiently clear and complete, in particular because there was no example showing at least one way of carrying out the invention, example 4 being incomplete, and because the specification failed to inform the skilled person how to ensure that the film layer would have greater elongation after lamination than the support layer. As a consequence it was not possible to work the invention within the whole scope claimed.
  
- It also pointed out that the auxiliary requests filed during the oral proceedings should be considered as late filed and therefore not admitted into the proceedings.

IX. The arguments presented by the Respondent in its written submissions and at the oral proceedings may be summarized as follows:

- None of the cited documents anticipated the claimed subject-matter. In particular the values given in Table II of D1 were contradictory and highly questionable. They could not serve as a novelty destroying disclosure. On the other hand D4 used films having a higher thickness and was silent about the method of measurement of the thickness. Therefore there was no clear and unambiguous teaching in any of the documents of all the features of the claims.

- Concerning inventive step, the Respondent argued that none of the cited documents gave a hint to the solution proposed by the patent, namely the combination of stress (load) and strain (elongation) properties of each of the materials claimed, which resulted in laminates with increased cross machine integrity.
  
  - The specification described the invention in a manner sufficiently clear and complete to be carried out by the skilled person. The examples and comparative examples therein showed which films result in a laminate according to the invention and which films result in a laminate outside the invention (comparative examples). Moreover the specification included a complete and detailed method of how to determine the elongation at break value after orientation of the laminates.
- X. The **Appellant** requested that the decision under appeal be set aside and that the European patent No. 0 799 131 be revoked.

The **Respondent** requested that the appeal be dismissed and that the patent be maintained in unamended form (main request) or, alternatively, on the basis of any of the auxiliary requests 1 to 4, filed on 16 August 2006, during the oral proceedings.

## Reasons for the Decision

1. The appeal is admissible.

### MAIN REQUEST

2. *Novelty (Article 54 EPC)*
  - 2.1 Interpretation of Claim 1
    - 2.1.1 Granted Claim 1 is directed to a film/support laminate (10) with the following features:
      - (1.0) comprising a film layer (12)
        - (1.1) having a machine and a cross machine direction,
        - (1.2) having been oriented in said machine direction prior to lamination,
        - (1.3) having an effective thickness of about 13  $\mu\text{m}$  or less,
        - (1.4) defining a film elongation at break value in cross machine direction after orientation and lamination (FE),
        - (1.5) defining a film peak load value in cross machine direction (FPL),
      - (2.0) comprising a support layer (14)
        - (2.1) having a machine and a cross machine direction,
        - (2.2) defining a support elongation at peak load value in cross machine direction (SE),
        - (2.3) defining a support peak load value in cross machine direction (SPL),

- (3.0) having film layer and support layer laminated to one another to form the laminate, wherein
  - (3.1) both layers having been aligned prior to lamination such that orientation in machine direction of both layers was parallel to each other,
- (4.0) said laminate having a machine and a cross machine direction
- (5.0) defining a laminate elongation at peak load value in cross machine direction (LE),
- (6.0) defining a laminate peak load value in cross machine direction (LPL), wherein
- (7.0) FE being greater than SE,
- (8.0) SPL being greater than FPL,
- (9.0) FPL being less than LPL and
- (10.0) LPL being at least 300 g (when measured by tensile test Method 5102).

2.1.2 From these features, features (1.1), (2.1) and (4.0) state that the film, the support and the laminate have a machine and a cross machine direction. This feature is inherent to any film/support/laminate and cannot contribute to the novelty of the laminates.

Additionally, features (1.4), (1.5), (2.2), (2.3), (5.0) and (6.0) merely define certain parameters of said film/support/laminate as the elongation at break

or the peak load but without giving any specific value for said parameters. Consequently, these features equally cannot contribute to the novelty of the claimed laminates.

Finally, features (7.0), (8.0) and (9.0) relate to the parameters of features (1.4) - (6.0) mentioned in the preceding paragraph specifying their interrelation. However, each of these features includes a parameter of the film or of the support **before** lamination which, as admitted by the Patentee during the oral proceedings, cannot be determined **after** lamination. These features cannot, therefore, characterize the claimed laminate.

2.1.3 On the other hand features (1.2), (1.3) and (3.1), although also addressing parameters of the film before lamination, can be ascertained in the resulting laminate, for instance by measuring the thickness of the film part of the laminate or by optical methods. These features, in addition to feature (10.0), which relates to a property of the laminate as such, and to features (1.0), (2.0) and (3.0), which define the starting materials and the lamination step, are essentially the characterising features of Claim 1.

2.2 The novelty of Claim 1 of the main request has been contested by the Appellant having regard to the disclosure of documents D1, D2 and D4.

2.2.1 Claim 15 of D4 in combination with Claim 11 is directed to a laminated sheet (feature 3.0) comprising a base fabric (feature 2.0), and an unsintered polytetrafluoroethylene (PTFE) porous sheet (feature 1.0), the porous sheet having a thickness of about 10

to 200  $\mu\text{m}$  (overlap with feature 1.3). The laminates of D4 are prepared by bonding the base fabric and the PTFE using a rubber-based pressure-sensitive adhesive in such a manner that their lengthwise directions are in agreement with each other (see page 5, lines 3 - 6 and page 7, lines 53 - 56) (features 1.2 and 3.1) and show a laminate peak load substantially greater than 300 g (see footnote to Tables 1 and 2: elongation measurement at 5.0 kgf) (feature 10.0).

Thus D4 discloses laminates having all the features of the laminates according to Claim 1 of the patent in suit, which is therefore not novel.

2.2.2 The Respondent argued that neither feature (1.3) nor feature (3.1) was disclosed in D4. In particular it contended that Examples 1 (and probably 2 to 4) and 5 in D4 used films having a thickness of, respectively, 55 and 56  $\mu\text{m}$ , i.e. outside the range covered by present Claim 1, and that D4 was silent about the method of measurement of the thickness while Claim 1 of the patent referred to the "effective" thickness ("gauge"), calculated by dividing the basis weight of the film layer by the density of the polymer(s) and fillers forming the film (see paragraph [0037] of the specification). Thus, it was not clearly and unambiguously derivable from D4 that the laminates therein used fell within the scope of Claim 1.

2.2.3 These arguments cannot be accepted by the Board.

- Concerning feature (3.1) reference is made again to all the examples of D4 (page 5, lines 5 - 6; page 7, line 56) which show the alignment of the

film and support. In the context of the purpose underlying the subject-matter of D4, namely the provision of stretchable laminated sheets, this feature must be understood to be part of D4's general teaching.

- Concerning feature (1.3) it is true that in the examples of D4 thicker films are used but the teaching of D4 is not to be construed as being limited to such specific examples. The thickness and porosity of the sheet depend on the purpose for which the laminated sheet is used and Claim 15 of D4 embraces films having a thickness overlapping with present Claim 1. It is the established jurisprudence of the boards of appeal that the disclosure content of a document is not limited to the worked examples but extends to everything pertaining to the nature of the claimed invention. In view of the conclusions drawn in the preceding paragraph, embodiments meeting the requirements of present Claim 1, including the thickness requirement of feature (1.3), are thus within the disclosure of D4.

This conclusion is not affected by the Respondent's argument that D4 related to the "measured" thickness and not the "effective" thickness, because it was convincingly argued by the Appellant that the latter value would necessarily be lower than the first-mentioned, thus even increasing the afore-mentioned thickness overlap.



2.3 Consequently, the teaching of D4 anticipates the subject-matter of Claim 1 of the main request, which is therefore not novel (Article 54 EPC).

3. *Admissibility of auxiliary requests 1 to 4*

3.1 These auxiliary requests were filed by the Respondent at a late stage of the proceedings, namely during the oral proceedings before the Board of Appeal. The only amendment made to Claim 1 of these requests is the reformulation of the laminate of the granted Claim 1 as a method for producing said laminate. This amendment takes account of the interpretation by the Board of the product-by-process character of certain features of Claim 1 of the main request and allows the Respondent to defend its patent using the parameters of the film layer and the support layer which could not be determined in the finished laminate itself (cf. point 2.1 above)

3.2 The Appellant stated that it was surprised by this late filing and requested that the auxiliary requests be not admitted into the proceedings.

3.3 The Board decided to admit these requests into the proceedings for the following reasons:

The amendments made to the claims are procedurally clearly admissible; they amount to reformulations only from the previous product category (laminate) to the process category (method for producing a laminate) without introducing any features not present in granted Claim 1 or included in the narrowing amendments already

contained in the auxiliary requests submitted by the Respondent with its letter dated 14 July 2006.

The same line of reasoning used by the Appellant for the main request is therefore in principle applicable to the subject-matter of the new requests and no further preparation is required for the Appellant to deal with them.

#### **FIRST AUXILIARY REQUEST**

#### 4. *Sufficiency of disclosure (Article 83 EPC)*

4.1 Claim 1 of the first auxiliary request relates to a method for producing a film/support laminate (10) comprising:

i) aligning a film layer (12) and a support layer (14) such that their machine direction orientation is parallel, and

ii) laminating said film layer and said support layer.

The method uses a relatively thin film layer having an effective thickness of less than 13  $\mu\text{m}$  and is characterized by the stress and strain properties of the film layer and support layer used.

When using such thin films, the film portion of the laminates tends to tear when the laminate is being used as an outer cover for diapers. To avoid such tearing, Claim 1 requires the control of certain properties, such as the elongation of the film and the support, and it requires essentially that the elongation at break value in cross machine direction of the film layer

after orientation and lamination be greater than the elongation at peak load value in cross machine direction of the support (see feature 7.0 of the feature analysis as detailed above under point 2.1.1).

4.2 Article 83 EPC requires that the European patent application discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. These requirements are met:

- i) if at least one way is clearly indicated in the patent specification enabling the skilled person to carry out the invention, and
- ii) if the disclosure allows the invention to be performed in the whole area claimed
- iii) without undue burden, applying common general knowledge.

4.3 The present description includes only one working example, (example 4; examples 1 to 3 are comparative examples) of the claimed method for the preparation of a laminate. Example 4 shows that full integrity of the laminate can be maintained at the test conditions when the film elongation at break value in cross machine direction of the film after orientation and lamination, the so-called "nipped" film, is greater (266.9%) than the support (nonwoven) elongation at peak load in cross machine direction (35.4%). The film of example 4 stays fully intact beyond the peak load of the laminate and would only fail when the nipped film elongation at break value is reached.

The Appellant criticized the reproducibility of this example because it did not specify all the conditions of the lamination step (no line speed is given) and because the test for the determination of the film elongation after orientation and lamination was not clear as it did not specify all the test conditions, for example, the nature of the silicon adhesives.

The Board does not agree with these objections of the Appellant. Lamination processes are well known in the field and the essential parameters are given in the example. The apparently missing line speed is specified in paragraph [0033] of the specification, where the same bonding process is detailed for the lamination when the nonwoven is replaced by a silicone coated release paper ("nipped film" test).

Moreover, the fact that the claim requires the definition of a film elongation at break value in cross machine direction after orientation and lamination, which is a parameter unusual in the field, does not imply that the parameter is inappropriate in itself. The use of such parameter makes a comparison with the prior art difficult, but this fact is not an issue when discussing sufficiency of disclosure. In the present case a clear and complete procedure for the determination of said parameter is given in the aforementioned paragraph [0033] in the description, which allows the skilled person to determine it. Concerning the silicon adhesives, it is noted that silicone coated release paper (page 15, line 17) is a commercially available product and the determination of the parameter is not tied to the use of any specific silicone adhesive.

- 4.4 The Board is thus satisfied that the disclosure of the patent indicates, in principle, one way to carry out the claimed method for the preparation of laminates including low gauge films and having the desired cross machine direction integrity in the laminate.
- 4.5 However the Board considers that the disclosure of the patent does not allow the skilled person to reduce the invention to practice without undue burden **in the whole area claimed.**
- 4.5.1 The reason for this is that the patent is silent about how this parameter, the elongation at break value in cross machine direction of the film after orientation and lamination is to be reliably achieved under the broad conditions covered by Claim 1 concerning the nature of the film used and/or the lamination process.
- 4.5.2 In fact, the specification does not impose any restriction on the type of film layer and support layer to be used or on the lamination conditions. Thus, the skilled person having prepared a laminate not fulfilling the conditions imposed by Claim 1, for instance the laminate of (comparative) examples 1 to 3 of the specification, is not informed in the description about how to modify the parameters of the film layer and/or of the support layer and/or the lamination conditions in order to arrive at a laminate according to the invention.

The only information given in the patent is that to improve resistance to tearing, the elongation at break in the cross machine direction of the nipped film layer

should be at least 10 percent greater than the elongation at peak load value in the support layer to compensate for its reduction in the nipped film due to the lamination process (see [0034]). However, no information is given as to which parameters should be considered for designing a film having the desired nipped film elongation at break or how the lamination process conditions influence the elongation.

- 4.5.3 Since the patent specification does not contain any information suitable to guide the skilled person in the direction of success, once he has encountered failure (eg with a film such as one of the examples 1 to 3), he is left with the burden of carrying out very many experiments to determine the conditions imposed by Claim 1 with any possible film. This is considered by the Board to amount to an undue burden for the skilled person, because the compliance of a film with the requirements of Claim 1 can only be ascertained after it has been subjected to a lamination process and after parallel execution of a "nipped film" test; and even then it is still not possible to know if any failure is due to the nature of the film used or to the lamination conditions.

Even though a reasonable amount of trial and error is permissible when it comes to assessing sufficiency of disclosure, there must still be available adequate instructions in the specification, or on the basis of common general knowledge, leading the skilled person necessarily and directly towards success, through the evaluation of initial failures, which is not the position in the present case.

4.6 The Respondent argued that the fact that an unusual parameter, like the elongation at break after orientation and lamination, is used for defining a property of the film did not jeopardize the sufficiency of disclosure as similar parameters have been used in related cases. It further pointed out that the skilled person reading the disclosure of example 2 [0052] would know how to modify the starting film in order to design a film having the desired elongation.

4.7 These arguments cannot be accepted by the Board. The lack of sufficiency does not arise from the use of an unusual parameter for defining the film layer; it results from the lack of information in the specification with respect to the elements that should be modified in the film layer in order to transform initial failure into success.

Moreover even if it could be accepted that the information in example 2 would allow the skilled person to design a laminate with a closely related film layer and fulfilling the specifications of the claimed process, this information could not be used for the preparation of further films made of different materials which are encompassed by the claimed process, which imposes no limitation on the kind of material for the film or the support layers, nor does it exclude different lamination processes from the one exemplified in the specification.

In summary, the patent specification not only lacks information with respect to the parameters which are relevant for the choice of the film layer and support layer, it is also not possible for the skilled person

to retrieve the missing information in a reliable manner by reworking the examples or by carrying out his own tests.

- 4.8 Under these circumstances, the skilled person is, in the Board's judgment, not able, without undue burden, to carry out the invention of Claim 1 over the whole range claimed. Hence, the requirements of sufficiency (Article 83 EPC) are not met and auxiliary request 1 cannot therefore be allowed.

#### **AUXILIARY REQUESTS 2 TO 4**

5. The reasoning in relation to the first auxiliary request applies *mutatis mutandis* to the subject-matter of auxiliary requests 2 to 4, which therefore cannot be allowed either.
6. In summary, none of the Respondent's requests is allowable.



**Order**

**For these reasons it is decided that:**

The decision under appeal is set aside.

The European patent is revoked.

The Registrar

The Chairman

G. Röhn

P. Kitzmantel