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Datasheet for the decision of 28 May 2013

Case Number: T 1850/11 - 3.3.09

Application Number: 98933792.8

Publication Number: 1007597

IPC: C09J 153/02, A61L 15/00

Language of the proceedings: EN

Title of invention:
Biological fluid absorbing pressure sensitive adhesives

Patentee:
AVERY DENNISON CORPORATION

Opponent:
Coloplast A/S

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1850/11 - 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 28 May 2013

Appellant: (Patent Proprietor)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 16 June 2011 revoking European patent No. 1007597 pursuant to Article 101(3)(b) EPC.

Composition of the Board:

Chairman: W. Sieber
Members: M. O. Müller
F. Blumer

Summary of Facts and Submissions

I. This decision concerns the appeal by the proprietor of European patent No. 1 007 597 against the opposition division's decision to revoke it for lack of inventive step.

II. The opponent had requested revocation of the patent in its entirety on the grounds that the claimed subject-matter was neither novel nor inventive (Article 100(a) EPC) and that the patent contained subject-matter which extended beyond the content of the application as filed (Article 100(c) EPC).

III. The documents submitted during the opposition proceedings included:

D2: US 5,587,237 A; and

D3: US 4,551,490 A.

IV. In its first decision, the opposition division revoked the patent on the grounds of added subject-matter and lack of clarity of all pending requests.

V. This decision was appealed by the proprietor. The appeal resulted in decision T 876/06 of 8 May 2007 (not published in OJ EPO), wherein the decision under appeal was set aside and the case was remitted to the opposition division for further prosecution on the basis of the claims of the main request, consisting of claims 1 to 4 and 5 (in part) filed with a letter dated 1 March 2007 and claims 5 (in part) and 6 to 13 filed

on 11 August 2006. Claim 1 of the main request reads as follows:

"1. A pressure-sensitive adhesive material comprising a mixture of:

(a) a continuous phase formed from a physically crosslinked solid rubber and a compatible liquid rubber, wherein the weight ratio of liquid rubber to solid rubber is from 3:2 to 7:1 and
(b) 20 to 55 percent by weight, based on the total adhesive material, of a discontinuous phase comprising one or more hydrophilic polymers that are soluble and/or swellable in water, said adhesive material being free of resinous materials."

In its decision, the board held that the amendments after grant met the requirements of Article 84 EPC and that the claims were based on the application as filed.

VI. In the subsequent second decision of the opposition division, announced orally on 25 May 2011 and issued in writing on 16 June 2011, the patent was revoked because the subject-matter of the main request from the previous appeal proceedings was not based on an inventive step. The opposition division's position can be summarized as follows:

Although novel, the subject-matter of claim 1 lacked an inventive step in view of the closest prior art D2 in combination with D3. More particularly, the only difference between the subject-matter of the main request and that of D2 was that the claimed adhesive

contained hydrophilic polymers. The technical effect resulting from this difference was that the adhesive adhered better to wet skin providing thereby a "wet tack" to the composition. The objective technical problem therefore was to provide a pressure sensitive adhesive composition having better wet tack properties. D3 taught that the wet tack of pressure sensitive adhesive compositions could be improved by the addition of water-soluble hydrocolloids. D3 also mentioned specific hydrocolloid contents of 30 to 65 wt% for ostomy adhesives. The subject-matter of claim 1 of the main request therefore was obvious in view of D2 in combination with D3.

Furthermore, even when starting from D3 as the closest prior art, the subject-matter of claim 1 of the main request did not involve an inventive step in view of D3 in combination with D2.

VII. On 15 August 2011, the proprietor (hereinafter "the appellant") filed a notice of appeal against the above decision and paid the prescribed fee on the same day. A statement setting out the grounds of appeal was filed on 20 October 2011 together with a main (sole) request. This main request is identical to the claims on which the opposition division's second decision to revoke the patent was based, which in turn is identical to the claims of the main request in the first appeal proceedings (point V above).

VIII. The opponent (hereinafter "the respondent") filed its response with letter of 27 February 2012.

IX. On 28 May 2013, oral proceedings were held before the board. Both parties maintained their written requests. No further requests were filed.

X. The appellant's arguments presented in the written and oral proceedings can be summarized as follows:

The invention of the opposed patent concerned hydrocolloid adhesives with good adhesion to wet skin. Since D2 was directed to medical adhesives with dry adhesion, which was a field different from that of the opposed patent, D2 could not form the closest prior art. Contrary thereto, D3 referred to hydrocolloid adhesives with wet adhesion and therefore constituted the closest prior art. The product of D3 represented the commercial product at the priority date of the opposed patent and the saline absorption in this product was very low. Starting from D3 as the closest prior art, the problem could therefore be seen in the improvement of the saline absorption. That this problem was solved by the claimed subject-matter was demonstrated by the experimental results in table 14. More specifically, the examples according to the invention of the opposed patent had a superior saline absorption compared to the commercial product 1, which could be assumed to be a product according to the teaching of D3. Starting from this problem of improving the saline absorption, there was no reason to look at D2. The subject-matter of claim 1 was therefore inventive in view of D3 in combination with D2.

Even if one started from D2 as the closest prior art, an inventive step had to be acknowledged. The subject-matter of claim 1 differed from D2 in that the claimed

adhesive material comprised a certain amount of a discontinuous phase comprising one or more hydrophilic water-soluble or water-swellable polymers. The problem addressed by the opposed patent in view of D2 was the provision of a pressure sensitive adhesive that was integrated and in which the number of different components was a minimum. In view of these problems, the claimed solution was also not obvious when taking D3 into account. In fact, the teachings of D2 and D3 were incompatible with each other as it was an essential feature of D2 that the adhesives were substantially free of tackifying resins while it was an essential feature of D3 that tackifiers were present. Even if the skilled person were to combine D2 with D3, he would not arrive at the subject-matter of claim 1. More specifically, D3 referred to a homogeneous mixture rather than a two-phase system as required by claim 1. Furthermore, when applying the teaching of D3 to that of D2, the skilled person would not arrive at the claimed phase morphology as D3 was silent about this issue. The phase morphology, in particular the presence of the continuous phase of solid and liquid rubber was, however, responsible for the integrity of the claimed adhesive. Furthermore, the compositions of D3 had to comprise a considerable amount of mineral oil while this component was not necessarily present in the adhesive material of claim 1. Finally, the material of one of the examples of the opposed patent was commercially highly successful, which further supported the presence of an inventive step.

XI. The respondent's arguments presented in the written and oral proceedings can be summarized as follows:

D2 was in the same technical field of medical adhesives as the opposed patent and furthermore had the same objective. Consequently contrary to the appellant's assertion, D2 could be considered to represent the closest prior art. This document disclosed a substantially resin-free adhesive that comprised a continuous phase of liquid and solid rubber with the ratio of a liquid and solid rubber being as required by claim 1. The subject-matter of claim 1 differed from D2 in that the adhesive material contained 20 to 55 weight percent of a discontinuous phase comprising a water-soluble or water-swellable hydrophilic polymer. The objective technical problem in view of this distinguishing feature was the provision of wet tack so that the adhesive adhered to moist skin surfaces. The skilled person confronted with this problem would have had D3 at his disposal that was in the same technical field as D2. In D3, it was explicitly stated that in order to provide wet tack, hydrocolloids, ie hydrophilic polymers, had to be added to the adhesive. D3 also disclosed amounts of the hydrophilic polymers as required by claim 1. By combining D2 with D3, the skilled person would hence arrive at the subject-matter of claim 1. This also included the feature of the phase morphology. More specifically, the term "homogeneous" in D3 did not imply that the adhesive of D3 was a one-phase composition but merely meant that the two phases of D3 were evenly distributed. Furthermore, the protocol of mixing the ingredients in D3 was highly similar to that in the opposed patent and hence the phase morphology obtained in D3 was as required by claim 1. Consequently, the subject-matter of claim 1 lacked an inventive step in view of D2 in combination with D3.

In this respect, the appellant's argument that D3 used a high number of components including mineral oil while claim 1 allowed for fewer components to be present in the adhesive was not convincing. More specifically, claim 1 of the opposed patent used a "comprising" language and hence the claimed adhesives could contain further components as well. This was in fact confirmed by paragraph [0015] of the opposed patent where it was stated that mineral oil could be added. The appellant's further argument that the problem addressed by the opposed patent in view of D2 was to provide a pressure sensitive adhesive that was integrated was not convincing either as this problem was not linked to the feature distinguishing the claimed subject-matter from D2. Furthermore, the fact that D3 disclosed the presence of a tackifier did not mean that the skilled person would not combine this document with D2 in order to solve the objective technical problem, as the presence or absence of tackifiers was not related to this problem. Finally, the appellant's argument with regard to the commercial success of the inventive product was flawed. There was, in particular, no proof that this success was due to the technical features of the claimed subject-matter.

Even when starting from D3 as the closest prior art, inventive step had to be denied. The subject-matter of claim 1 differed from D3 in that the tackifier of this document had been replaced by a liquid rubber. In view of this distinguishing feature, the objective technical problem was the provision of an adhesive that avoided skin irritation while maintaining adhesion. The solution to this problem was already described in D2.

More specifically this document disclosed that the addition of a liquid rubber imparted to the solid rubber a degree of adhesiveness and tackiness which was conventionally achieved by the addition of tackifying resins. Furthermore it disclosed the claimed ratio of liquid and solid rubber. The appellant's argument that in view of D3, the problem was the provision of an improved saline absorption was not correct. Firstly, this problem was not linked to the feature distinguishing the claimed subject-matter from D3. Secondly, example 11 of the opposed patent showed a saline absorption that was inferior to that of commercial product 1 in table 14, which was alleged to be according to the teaching of D3.

XII. The appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the main request filed with the statement setting out the grounds of appeal dated 20 October 2011.

XIII. The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Main (sole) request

2. Inventive step

2.1 The present second appeal is confined to the issue of inventive step.

2.2 The invention underlying the opposed patent concerns pressure sensitive adhesives and in particular those suitable in the medical field, for example for use with wound dressings where they are applied directly to open wounds and secured on the surrounding intact skin (page 2, lines 3 to 4 and 9 to 10). The patent addresses the problem of dry and moist skin adhesion (page 4, line 25 and page 5, lines 47 to 48).

2.3 D2 relates to healthcare pressure sensitive adhesive products having improved tack and adhesion characteristics to human skin (claim 1). Thus, D2 is not only in the same technical field as the opposed patent, namely pressure sensitive adhesives in health (medical) care, but it also addresses the same problem as the opposed patent, namely that of providing improved skin adhesion (column 1, line 19, column 5, line 28 and claim 1). Therefore, D2 can be considered to represent the closest prior art.

The pressure sensitive adhesive compositions of D2 comprise a liquid and a solid rubber with a weight ratio of liquid to solid rubber of from 0.5:1 to 7:1, preferably from 3:2 to 7:2. This corresponds to the continuous phase (a) of claim 1. Furthermore, the adhesive compositions of D2 are substantially free of tackifying resins (column 2, lines 19 to 20 and 35 to 42 as well as claims 1 to 3).

The appellant disputed that D2 constituted the closest prior art. It was, in particular, argued that D2 concerned adhesives with dry adhesion while the opposed patent related to hydrocolloid adhesives requiring

adhesion to moist skin. This argument is, however, not convincing. More specifically, it is apparent from the above-cited passages that the patent is also concerned with adhesion to dry skin, in the same way as D2.

2.4 The problem underlying the patent in suit in the light of D2 is the provision of a pressure sensitive adhesive that provides, apart from dry tack, also a wet tack to moist body surfaces.

2.5 As a solution to this problem the patent in suit proposes a pressure sensitive adhesive material according to claim 1, which is characterised by the feature of comprising 20 to 55% by weight of a discontinuous phase comprising one or more water-soluble and/or water-swellable hydrophilic polymers (for the exact wording of this feature, see point V above). As acknowledged by both parties, this feature is not disclosed in D2.

2.6 On page 5, lines 47 to 49 of the patent, it is stated that *"[T]he hydrophilic polymer functions as the absorbent, and to provide the "wet tack" that ensures the adhesive adheres to the skin and to mucous membranes when they are moist"*. In view of this statement, the board has no reason to doubt - and in fact it was explicitly acknowledged by the respondent - that this problem has been credibly solved. This problem therefore constitutes the objective technical problem.

2.7 The appellant saw the problem to be solved in view of D2 in the provision of an adhesive which firstly comprised a minimum number of different components and

which, secondly, was integrated, implying that the adhesive could absorb body fluids while retaining its integrity.

2.7.1 As regards the first aspect, namely that the problem solved in view of D2 was the provision of an adhesive with a minimum number of components, the board notes that claim 1 contains the term "comprising". Thus the adhesive of this claim is not restricted in terms of the number of components. This is confirmed by the opposed patent itself which states on page 4, line 13 that other rubbers and additives such as mineral oil and low molecular weight polymers may be present. Consequently, contrary to the appellant's assertion, claim 1 covers embodiments that do not solve the problem of providing an adhesive with a minimum number of different components. This (subjective) problem thus cannot be the objective technical problem.

2.7.2 As regards the second aspect, namely that the problem solved in view of D2 was the provision of an integrated pressure sensitive adhesive, the appellant acknowledged during the oral proceedings that the integrity of the adhesive is linked to the continuous phase which is already disclosed in D2 (mixture of solid and liquid rubber, see point 2.3 above). The problem referred to by the appellant is thus already solved by D2 and so cannot form the objective technical problem either.

2.8 It remains to be examined whether the solution to the objective technical problem, namely the provision of a pressure sensitive adhesive with wet tack to moist body surfaces (point 2.6 above) is obvious in view of the prior art.

2.8.1 When looking for a solution to the objective technical problem, the skilled person would come across D3, which is in the same technical field as D2, namely pressure sensitive adhesive compositions in medical applications (column 1, lines 9 to 10 and claim 1) and which in the same way as D2 addresses the issue of improved skin adhesion (column 2, line 22).

D3 (column 2, lines 12 to 17) discloses an adhesive material comprising mineral oil, one or more polyisobutylenes or mixtures of one or more polyisobutylenes and an elastomer, a styrene radial or block type copolymer (corresponding to the solid rubber of claim 1), water-soluble hydrocolloid gums (corresponding to the hydrophilic polymer of claim 1), water swellable cohesive strengthening agents and tackifiers.

From D3, the skilled person would learn that "water-soluble hydrocolloids enable the adhesive compositions to adhere to moist body surfaces, i.e. wet tack." (column 3, lines 49 to 51).

2.8.2 The skilled person confronted with the objective technical problem and thus trying to ensure that the adhesive of D2 adheres to moist body surfaces such that it has wet tack would hence be motivated by D3 to include a water-soluble hydrocolloid. The skilled person would thereby arrive at an adhesive that comprises a hydrophilic polymer as required by claim 1.

2.8.3 The amount of water-soluble hydrocolloid disclosed in D3 is 15 to 65 wt% (column 4, lines 8 to 16 and claim 1)

with the amounts in all examples 1 to 22, 24 and 25 being within the claimed range of 20 to 55 wt%. The skilled person applying the teaching of D3 to D2 would thus also arrive at an amount of hydrophilic polymer as claimed.

2.8.4 Finally, by incorporating the water-soluble hydrocolloid of D3, which is hydrophilic, to the liquid and solid rubbers of D2, which are both hydrophobic, two phases would automatically form. The skilled person applying the teaching of D3 to D2 would thus also arrive at a two-phase system as required by claim 1.

The appellant argued in this respect that the skilled person would arrive at a one- rather than a two-phase system since D3 referred to a "homogeneous" and thus one-phase mixture. This argument is, however, not convincing. Hydrophobic and hydrophilic components are incompatible. The hydrophobic and hydrophilic components in D3 hence inevitably form a two-phase system. Therefore, the term "homogeneous" in D3 can only mean that the two phases are homogeneously distributed within the mixture. The fact that D3 refers to a two-phase system is confirmed by the opposed patent itself which, when discussing D3 (US 4,551,490) in paragraph [0008], states that this document discloses "a heterogeneous mixture" of components.

The appellant further argued in this respect that the skilled person applying the teaching of D3 to that of D2 would not arrive at the specific phase morphology as claimed, wherein the liquid and solid rubbers form the continuous phase and the hydrophilic polymer the discontinuous phase. More specifically, as D3 was

silent about the phase morphology, one could not assume that the phase morphology in this document was as required by claim 1. The board does not find this argument convincing either. The adhesives are prepared in D3 (all examples, in particular column 6, lines 48 to 62) by first mixing the hydrophobic components, ie mineral oil, polyisobutylene, and the solid rubber (Kraton® 1107), and by subsequently adding the hydrophilic components including the water-soluble hydrocolloid (sodium carboxymethylcellulose and crosslinked sodium carboxymethylcellulose). When applying the teaching of D3 to that of D2, the skilled person would therefore first form the mixture of the hydrophobic solid and liquid rubbers of D2 and subsequently add the hydrocolloid of D3 to this mixture. This mixing order is the same as that in the opposed patent. More specifically, in the examples of the opposed patent, the hydrophobic components are mixed first and subsequently the hydrophilic water-soluble or water-swellable polymer is added. With the mixing orders being identical, the phase morphologies so obtained must also be identical. Consequently, by applying the mixing sequence of D3 to D2, the skilled person arrives at the phase morphology of claim 1.

2.8.5 The appellant finally argued that the teachings of D2 and D3 were incompatible with each other as it was an essential feature of D2 that the adhesives were substantially free of tackifying resins while it was an essential feature of D3 that tackifiers were present. However, the presence or absence of tackifiers has no bearing on the explicit teaching in D3 that hydrocolloids improve the wet tack. Consequently, there

is no reason why the skilled person should not apply this teaching of D3 concerning the wet tack to D2.

2.8.6 The subject-matter of claim 1 is thus obvious in view of D2 in combination with D3 implying that inventive step in view of D2 in combination with D3 has to be denied.

2.8.7 This finding is not changed by the appellant's further argument that the material of one of the examples of the opposed patent was commercially highly successful. Firstly, even if this commercial success would prove an inventive step for the material of this specific example, it would have no bearing on the inventive step of further materials covered by claim 1. Secondly, there is no proof that the commercial success is due to the technical features of the material of this example.

2.9 The appellant was of the opinion that D3 rather than D2 constitutes the closest prior art. However, even if one starts from this document as the closest prior art, inventive step has also to be denied.

2.9.1 As not disputed by the appellant, the adhesive material of claim 1 differs from that of D3, which contains a tackifying resin (see points 2.8.1 and 2.8.5), solely in that it is free of resinous materials and in that a liquid rubber is present in a certain amount (defined in the claim by the ratio of liquid to solid rubber).

2.9.2 The problem underlying the opposed patent in view of D3 is the provision of pressure sensitive adhesives that do not contain any leachable compound that leads eg to skin irritation (page 4, lines 4 to 8).

2.9.3 As a solution to this problem, the patent in suit proposes a pressure sensitive adhesive material characterized by comprising a liquid rubber instead of the resinous material of D3 with the weight ratio of liquid to solid rubber being from 3:2 to 7:1.

2.9.4 As acknowledged by the respondent, the above subjective problem has been credibly solved and therefore constitutes the objective technical problem.

2.9.5 It is already known from D2 that the addition of liquid rubber imparts to solid rubber a degree of adhesiveness and tackiness which was conventionally achieved by the addition of tackifying resins (column 2, lines 32 to 34). As set out above, the preferred ratio of liquid to solid rubber in D2 is 3:2 to 7:2, which is within the claimed range.

The skilled person starting from D3 and trying to avoid tackifiers would thus replace the tackifier in D3 by the liquid rubber of D2 in a ratio of 3:2 to 7:2. By doing so, he would arrive at the claimed material.

As regards the phase morphology, the same argument as made above applies, namely that by applying the mixing sequence as disclosed in D3, the skilled person would automatically arrive at the claimed phase morphology.

2.9.6 In view of this, the subject-matter of claim 1 is also obvious in view of D3 in combination with D2.

2.9.7 As regards inventive step starting from D3 as the closest prior art, the appellant argued that the

product of D3 represented a commercial product at the priority date of the opposed patent and that the saline absorption in this product was very low (page 3, lines 23 to 33 of the opposed patent). The problem would therefore be the improvement of saline absorption. That this problem was solved by the claimed subject-matter was demonstrated by the experimental results in table 14. More specifically, the examples according to the invention had a superior saline absorption compared to the commercial product 1, which could be assumed to be a product according to the teaching of D3.

The board does not find the appellant's argument convincing. Firstly, contrary to the appellant's assertion, the examples cannot prove that the claimed pressure sensitive adhesives are superior in terms of saline absorption. In fact, the absorption of the material of example 11, which is according to claim 1 of the patent, is inferior rather than superior to that of commercial product 1. Secondly, the appellant's assertion that commercial product 1 is according to the teaching of D3 is an unproven statement only. Hence the alleged superior saline absorption over commercial product 1 does not necessarily imply a superior saline absorption over D3.

2.10 In conclusion, inventive step of the subject-matter of claim 1 has to be denied in view of both the combination of D2 with D3 and the combination of D3 with D2.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Sanchez W. Sieber