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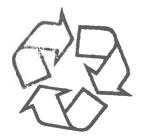
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DECISION of 15 December 2003



Case Number:

T 0137/01 - 3.2.6

Application Number:

92115510.7

Publication Number:

0532002

IPC:

A61F 13/15

Language of the proceedings:

EN

Title of invention:

Absorbent composites and absorbent articles containing same

Patentee:

KIMBERLY-CLARK WORLDWIDE, INC.

Opponents:

Stockhausen GmbH & Co. KG The Procter & Gamble Company SCA Research AB Nippon Shokubai Company Limited

Headword:

Relevant legal provisions:

EPC Art. 83, 84, 123(2)

Keyword:

"Sufficiency of disclosure (no) - main request"

"Clarity (no), added subject-matter (yes) - auxiliary request"

Decisions cited:

T 0409/91, T 0685/90

Catchword:



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Boards of Appeal

Chambres de recours

Case Number: T 0137/01 - 3.2.6

DECISION of the Technical Board of Appeal 3.2.6

of 15 December 2003

Appellant I:

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(Opponent I)

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Respondent:

KIMBERLY-CLARK WORLDWIDE, INC.

(Proprietor of the patent)

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Representative:

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Decision under appeal:

Decision of the Opposition Division of the European Patent Office posted 30 October 2000 rejecting the opposition filed against European patent No. 0532002 pursuant to Article 102(2)

Composition of the Board:

Chairman:

P. Alting van Geusau

Members:

G. Pricolo

M.-B. Tardo-Dino

Summary of Facts and Submissions

The appeal is from the decision of the Opposition Division posted on 30 October 2000 to reject the oppositions filed against European patent No. 0 532 002, granted in respect of European patent application No. 92115510.7.

In the decision under appeal the Opposition Division considered that the scope of claim 1 was restricted to superabsorbent particles having a size of between 300 and 600 microns or superabsorbent fibres and concluded that the skilled person could carry out the invention on the basis of specific disclosures of the patent in suit in this respect.

Furthermore, the Opposition Division held that the claimed subject-matter was novel and involved an inventive step.

- II. The appellants (opponents I to IV) lodged appeals against this decision. The appeals were received at the EPO on 20, 22, 20 and 28 December 2000 respectively. The appeal fees were paid on 27, 22, 20 and 28 December 2000 respectively. The statements setting out the grounds of appeal were received at the EPO on 27, 15, 28 and 26 February 2001 respectively.
- III. In an annex to the summons for oral proceedings pursuant to Article 11(2) Rules of Procedure of the boards of appeal the Board expressed its preliminary opinion that particles having a size below 300 or above 600 µm were excluded from the disclosed test procedure for determining the values of the parameters "Deformation under Load" (DUL) and "Wicking Index" (WI) and that the requirement of sufficiency of disclosure

was linked to the question of whether claim 1 excluded a superabsorbent material with particles of a size outside the range of 300 to 600 μm . Furthermore, the Board stated that it would appear that the test results filed by the appellants in respect of the superabsorbent materials used in the absorbent composite referred to in document

D2: DE-C-4 020 780

supported the conclusion that the subject-matter of claim 1 lacked novetly.

- IV. In response to the Board's preliminary opinion, the respondent (patentee) filed with a letter dated 14 November 2003 new claims forming the basis for a new main request for maintenance of the patent in amended form.
- V. Oral proceedings took place on 15 December 2003.

The appellants requested that the decision under appeal be set aside and that the patent be revoked.

The respondent requested that the appeal be dismissed and that the patent be maintained on the basis of the main request filed with a letter dated 14 November 2003 or alternatively on the basis of the auxiliary request filed during the oral proceedings.

VI. Claim 1 of the main request reads as follows:

"An absorbent composite comprising a matrix of fibers and superabsorbent material characterized by having at least about 50 weight percent superabsorbent material

based on the combined weight of the fibers and the superabsorbent material, said superabsorbent material having a Deformation Under Load (DUL) of 0.4 millimeters or less and a Wicking Index (WI) of 12 centimeters or greater."

Claim 1 of the auxiliary request reads as follows:

"An absorbent composite comprising a matrix of fibers and superabsorbent material characterized by having at least about 50 weight percent superabsorbent material based on the combined weight of the fibers and the superabsorbent material, said at least 50 weight superabsorbent material having a particle size between 300 and 600 µm and a Deformation Under Load (DUL) of 0.4 millimeters or less and a Wicking Index (WI) of 12 centimeters or greater."

VII. In support of its requests appellant I relied essentially on the following submissions:

Since claim 1 of the main request referred in general to a superabsorbent material its scope included an absorbent composite comprising not only superabsorbent particles of a size within the range of 300 to 600 µm, but also outside this range, in particular small particles having a size below 300 µm. Such small particles would fill the spaces between the greater particles and would thereby impair the wicking ability of the superabsorbent material. Therefore it was clear that the wicking index was not an intrinsic feature of the superabsorbent material but one dependent on the particle size distribution within the superabsorbent material. As a consequence, claim 1 failed to give a

clear teaching to the skilled person on how to select a superabsorbent material having a good ability to wick away fluid.

Claim 1 of the auxiliary request did not meet the requirements of Article 123(2) EPC because the application as filed did not disclose that the superabsorbent material comprised only particles of a size between 300 and 600 μ m, but only that such particles were used when carrying out the test for measuring the deformation under load and the wicking index. Nor was the claim clear in that respect, contrary to Article 84 EPC, since it left open the possibility that the superabsorbent material comprised particles of a size outside the range of 300 to 600 μ m.

Appellant II essentially submitted that according to VIII. the patent in suit both the wicking index and the deformation under load were measured on a fraction of the superabsorbent material, namely on particles having a size of 300 to 600 µm obtained after sieving the superabsorbent material. However, such a fraction could not be regarded as representative of the behaviour of the whole superabsorbent material as regards its ability to wick away fluid (wicking index) and its ability to maintain wicking channels when swollen (deformation under load). For instance, claim 1 of the main request included the case of a superabsorbent material consisting mainly of particles having a size smaller than 300 μm in which a very small amount of particles in the range of 300 to 600 µm was added. However, such small amount could not be representative of the behaviour of the entire superabsorbent material. Moreover, different values for the deformation under

load and the wicking index were obtained if the tests described in the patent in suit were carried out on both sieved and unsieved superabsorbent material, as shown by the results of tests carried out by appellant II. The patent failed to specify how much of the superabsorbent material should consist of particles having a size in the range of 300 to 600 µm and it left to the skilled person the selection of a proper amount thereof. The patent, however, did not contain any information enabling the skilled person to infer whether any specific selections would fulfil the invention, ie whether the technical problem underlying the patent in suit would be effectively solved by any such selection.

Table I of the patent in suit did not support the respondent's allegation that the size of the particles was irrelevant for the performance of the invention. Indeed, table I related exclusively to the case of an absorbent composite comprising 50% superabsorbent material and 50% fluff whilst claim 1 of the main request was not so limited. Moreover, the results listed in table I were based on a comparison made with a commercially available diaper manufactured by the respondent itself and the results might look different if the comparison were made with other available diapers.

Claim 1 of the auxiliary request was ambiguous because it could either be interpreted as relating to an absorbent composite comprising superabsorbent material with only particles having a size in the range of 300 to 600 μ m, or as relating to an absorbent composite comprising superabsorbent particles having a size in

the range of 300 to 600 μm but also superabsorbent particles outside this range. For the first interpretation, which was the one intended by the respondent, there was no support in the application as filed, contrary to the requirements of Article 123(2) EPC, because the application as filed did not disclose that the sieving step could be dispensed with when carrying out the test for measuring the deformation under load and the wicking index of a superabsorbent material for use in the claimed absorbent. Moreover, superabsorbent particles of a size from 300 to 600 μm usually formed a minor portion only of the whole superabsorbent material, as shown for instance by document

D5: EP-A-0 339 461.

IX. The arguments of appellant III can be summarised as follows.

The removal of the term "about" in respect of the values for the deformation under load and the wicking index specified in claim 1 was contrary to the requirements of Article 84 and 123(2) EPC. In fact, with the tests for measuring the deformation under load and the wicking index disclosed in the patent in suit it was not possible to obtain precise figures, and therefore there was no support at all for any figure which was not "about".

As regards sufficiency of disclosure, appellant III concurred with appellant II's arguments and additionally submitted that in order to determine which specific content of superabsorbent particles having a

size in the range of 300 to 600 µm was acceptable the skilled person should carry out performance evaluation tests of the kind described in the patent in suit for various absorbent articles having a different content of superabsorbent particles of a size in the range of 300 to 600 µm. This however resulted in an undue burden on the skilled person. Table I of the patent in suit did not contain any information about the particle size distribution in the samples and therefore could not support the allegation that the particle size distribution was irrelevant for the attainment of the desired technical effects. Furthermore, in the present case the burden of proof was on the respondent to show that the invention could be performed in the whole range claimed.

Also in respect of claim 1 of the auxiliary request appellant III essentially concurred with appellant III's arguments and added that although the application as filed disclosed that the test for measuring the deformation under load and the wicking index was carried out using superabsorbent particles which were sieved such as to have a size in the range of 300 to 600 μ m, there was no disclosure to put the sieved particles only in an absorbent composite.

X. Appellant IV essentially agreed with the objections under Articles 84 and 123(2) EPC raised by appellant III, and additionally submitted that the presence of the expression "about 50 weight percent" rendered the claim unclear, because it did not define a precise limitation.

As regards sufficiency of disclosure, appellant IV essentially submitted that the test procedure disclosed in the patent in suit for determining the values of deformation under load and wicking index of the superabsorbent particles only gave information about the behaviour of a small fraction of the superabsorbent material, namely the fraction consisting of particles having a size within the range of 300 to 600 $\mu\text{m}\text{,}$ but could not be used to evaluate the behaviour of the whole superabsorbent material which usually comprised a majority of particles outside that range. Moreover, there was no disclosure in the patent in suit of a method for determining the deformation under load and the wicking index of said whole superabsorbent material. Considering that claim 1 of the main request defined values for the deformation under load and the wicking index of the superabsorbent material as a whole ("said superabsorbent material having a Deformation Under Load..."), it followed that the invention was not sufficiently disclosed.

As regards claim 1 of the auxiliary request, appellant IV agreed with the other appellants that it lacked clarity but raised no objections under Article 123(2) EPC if claim 1 was understood to seek protection for an absorbent composite comprising only superabsorbent particles having a size in the range of 300 to 600 μ m.

XI. The respondent disputed the appellant's views and essentially argued as follows.

Since the expression "about 50 weight percent" was already present in a dependent claim as granted, clarity thereof should not be an issue, in accordance

with the case law of the boards of appeal. The removal of the term "about" in respect of the values for the deformation under load and the wicking index in claim 1 corresponded to the common practice of the examining divisions of the EPO according to which approximate terms in claims should be avoided. By means of this amendment, claim 1 was restricted to a precise value and thus defined a clear limitation. In any case, the claim had to be read with the eyes of a skilled person and not in a formalistic way.

Claim 1 of the main request required the absorbent composite to contain a superabsorbent material for which the deformation under load and the wicking index could be measured by means of the test disclosed in the patent in suit. Since the test required sieving out particles of a size between 300 to 600 µm, it was clear that the superabsorbent material referred to in claim 1 necessarily included an amount of such particles. The sieving step, which was common practice in the art, was necessary in order to compare superabsorbent materials of the same scale as they usually came in different particle-size distributions. Furthermore, the deformation under load and the wicking index were primarily intrinsic properties of the superabsorbent material, and the size range of 300 to 600 µm was the most common for superabsorbent particles. In any case, the appellants did not demonstrate the existence of any superabsorbent material for which the values of deformation under load and wicking index could be measured with the test procedure disclosed in the patent in suit, which measured values fell within the terms of claim 1, that failed to work well and thereby provide a solution to the problem underlying the patent

in suit. The burden of proof concerning this issue was on the appellants. Moreover, for a particular superabsorbent material fulfilling the requirements of claim 1 in respect of deformation under load and wicking index, benefits were obtained across the whole range of particle-size distribution. Indeed, as evidenced by table I of the patent in suit, the size of the particles was essentially irrelevant for the performance of the invention. The deformation under load and the wicking index were parameters that predicted how a given material performed at any particle size. The contrary had not been demonstrated by the appellants.

Claim 1 of the auxiliary request was clearly restricted to an absorbent composite comprising only superabsorbent particles having a size in the range of 300 to 600 µm. Support for this feature was found in claims 1 and 19 of the patent as granted, read in conjunction with page 5. In fact, it was clear from the disclosure on page 5 that two possibilities were envisaged: either the superabsorbent material comprised only particles having a size in the range of 300 to 600 µm, or it comprised such particles and also particles having a size outside the range of 300 to 600 µm. The first possibility, which was more restricted, clearly represented a preferred embodiment of the invention.

Reasons for the Decision

1. The appeals are admissible.

- The main request
- 2.1 Amendments (Articles 123 and 84 EPC)
- 2.1.1 The wording of claim 1 is based on the disclosure of claims 1, 3 and 6 of the application as filed, with the only difference that claims 3 and 6 recite "Deformation Under Load of about 0.4 millimeter or less" and "Wicking Index of about 12 centimeters or greater" whilst claim 1 omits the term "about" in these expressions.

The Board takes the view that in the present context, considering that the claim must be read with the eyes of a skilled person as correctly pointed out by the respondent, the omission of the term "about" does not result in the claim containing subject-matter which extends beyond the content of the application as filed. In fact, both the test procedure for measuring the deformation under load (page 5 of the patent in suit, line 20 ff.) and the test procedure for measuring the wicking index (page 6 of the patent in suit, line 15 ff.) require several manipulations and various measurement readings which are a source of errors. Thus, it is clear that these test procedures can only give measurements of the deformation under load and of the wicking index with a certain approximation (measurement error). Therefore, it is clear for the skilled person that the expressions "Deformation Under Load of 0.4 millimeter or less" and "Wicking Index of 12 centimeters or greater" in claim 1 refer in practice to approximate limits for the deformation under load and the wicking index. For this reason, they are equivalent in substance to the expressions "Deformation Under Load

of about 0.4 millimeter or less" and "Wicking Index of about 12 centimeters or greater", respectively, recited in the claims of the application as filed.

It follows that the amendments of claim 1 are not contrary to the requirements of Article 123(2) EPC. They also do not give rise to objections under Article 123(3) EPC, as they restrict the protection conferred.

- 2.1.2 Since, as explained above, it is of no significance whether the term "about" is attached or not to the numerical values of the deformation under load and of the wicking index defined in claim 1 (because in any case such numerical values must be regarded as approximate), the omission of the term "about" does not result in a lack of clarity or in a lack of support by the description that would constitute an infringement of Article 84 EPC.
- 2.1.3 As regards the objection of appellant IV that the expression "at least about 50 weight percent superabsorbent material" does not define a clear limitation in view of the presence of the term "about", the Board takes the view that this term does not render the claim unclear but merely underlines the fact that the limit for the percentage of superabsorbent material in the claimed absorbent composite should also be regarded as an approximate figure in view of the normal variations inherent in the processes of industrial manufacture of absorbent articles.

- 2.2 Sufficiency of disclosure (Article 83 EPC)
- 2.2.1 The subject-matter of claim 1 concerns an absorbent composite which has
 - at least about 50 weight percent superabsorbent material based on the combined weight of the fibres and the superabsorbent material, whereby
 - said superabsorbent material has a Deformation Under Load (DUL) of 0.4 millimeters or less and a Wicking Index (WI) of 12 centimeters or greater.

Considering that the expression "said superabsorbent material" refers to the "at least about 50 weight percent superabsorbent material" based on the combined weight of the fibres and the superabsorbent material, ie to the whole superabsorbent material present in the absorbent composite, it is clear that claim 1 defines numerical limitations in respect of both the deformation under load and the wicking index for the whole superabsorbent material present in the absorbent composite.

For determining the "Deformation Under Load" and the "Wicking Index" of a given superabsorbent material there exists no standardised measurement procedure. In fact, none of these two parameters belongs to the skilled person's general knowledge. Since the claim does not include any information about how to measure the two parameters either, it is necessary to refer to the description of the patent in suit which discloses specific test procedures for determining the deformation under load and the wicking index "for the

superabsorbent materials of this invention" (see page 5, lines 9 and 10, of the patent in suit). The test procedure for determining the deformation under load requires a sample of the superabsorbent material to be sieved to a particle size of between 300 and 600 um (see page 5, lines 46 and 47, of the patent in suit). Only fibrous superabsorbent materials need not be sieved (page 5, line 48). Also the test procedure for determining the wicking index requires a sample of the superabsorbent material to be sieved to a particle size of between 300 and 600 µm (see page 6, lines 43 and 44, of the patent in suit). However, the patent is silent about how to proceed in determining the wicking index if fibrous superabsorbent materials are used. Therefore, assuming that the test procedures are sufficiently described so that they can be reproduced by a skilled person, the patent in suit discloses how to determine the deformation under load and the wicking index only for particles of superabsorbent material having a size of between 300 and 600 µm.

Claim 1, as confirmed by the respondent patentee's own admission, is not limited to absorbent composites comprising superabsorbent material consisting only of particles having a size of between 300 and 600 μm . Claim 1 is to be construed as encompassing the presence of superabsorbent material having the particle size distribution of products in the form sold by the manufacturer (however including particles of a size from 300 to 600 μm so that the deformation under load and the wicking index can be determined), in particular known superabsorbent material of the kind disclosed for instance by document D5 where particles having a size within the range of 300 to 600 μm only form a minor

portion of the superabsorbent material (see D5, Table C, example I). The patent, however, does not disclose how much of a superabsorbent material with a generic particle size distribution must consist of particles having a size in the range of 300 to 600 µm in order for the test results to be representative of the deformation under load and of the wicking index of the whole superabsorbent material. The patent even fails to specify the amount of particles having a size in the range of 300 to 600 µm in the superabsorbent materials used in the examples (see page 9 to 11 of the patent in suit). Therefore, if a superabsorbent material is used which comprises, for example, only a minor amount of particles within the range of 300 to 600 µm on the basis of which the deformation under load and the wicking index are determined, the disclosure of the patent in suit does not contain sufficient information to conclude that such superabsorbent material as a whole is suitable for achieving the desired effects underlying the patent in suit, which effects according to the wording of claim 1 are obtained when the measured values of the deformation under load and of the wicking index of the whole superabsorbent material fall within specific numerical ranges.

It follows that the disclosure of the patent in suit is not sufficient to allow the invention to be carried out within the whole area claimed (see eg T 409/91, OJ 1994, 653).

2.2.2 The respondent submitted that the deformation under load and the wicking index were primarily intrinsic properties of the superabsorbent material, and that these parameters predicted how a given material performed at any particle size.

> It is a fact that in the patent in suit the deformation under load and the wicking index are determined on a sample of particles which have been sieved so that their size is within the range of 300 to 600 μm . By the patentee's own admission, the sieving step is necessary in order to compare superabsorbent materials on the same scale, as they usually come in different particle size distributions. If the deformation under load and the wicking index were independent of the particle size distribution within a given superabsorbent material, the sieving step would not be necessary. Thus, it is clear for the skilled person that the particle-size distribution actually plays a role in determining the deformation under load and the wicking index. Therefore, the skilled person trying to put into practice the invention is not in a position to establish to what extent the numerical limits for the deformation under load and the wicking index referred to in claim 1 can be correlated to those of a given superabsorbent material having a generic particle-size distribution which he intends to use. In other words, the skilled person is not in a position to know whether he is working within the area covered by the claim, in particular when the values of the deformation under load and of the wicking index are close to the numerical limits referred to in claim 1.

Nor can the data of table I of the patent in suit be regarded as evidence that the size of the particles is irrelevant in respect of the measurement of the deformation under load and of the wicking index, because there is no disclosure of the particle size distribution of the samples of superabsorbent materials used for obtaining the data of table I.

2.2.3 The respondent further submitted that the appellants did not demonstrate the existence of any superabsorbent material for which the values of deformation under load and wicking index could be measured with the test procedure disclosed in the patent in suit, which measured values fell within the terms of claim 1, that failed to work well and thereby provide a solution to the problem underlying the patent in suit.

In this respect, the Board notes that it does not deny that any superabsorbent material having a deformation under load and a wicking index measured on a sample consisting of particles having a size of 300 to 600 µm and falling within the terms of claim 1 might work well when used in an absorbent composite. However, this is not the point at issue. What is relevant is whether the deformation under load and the wicking index of such superabsorbent material can be correlated to the numerical ranges defined in claim 1, so that it is clear that the technical effects which are to be obtained when the requirements of claim 1 are met are effectively achieved. This, as explained above, cannot however be determined on the basis of the disclosure of the patent in suit.

- 2.2.4 Therefore, the main request is not allowable because the claimed invention is not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC).
- 3. The auxiliary request
- 3.1 During oral proceedings, the respondent declared that claim 1 was amended in order to restrict it to superabsorbent materials exclusively comprising particles of a size between 300 and 600 µm.

However, the wording of claim 1 is ambiguous in this respect because it leaves room for two possible interpretations: a first, according to which the superabsorbent material comprises particles of a size between 300 and 600 μ m but also particles of a size outside this range, and a second according to which the superabsorbent material comprises only particles of a size between 300 and 600 μ m.

Therefore, since claim 1 does not clearly define the intended limitation, it does not meet the requirements of Article 84 EPC.

3.2 If claim 1 is interpreted as intended by the respondent to be directed to an absorbent composite comprising a superabsorbent material consisting of (ie comprising only) particles of a size between 300 and 600 µm, then the amendment must be regarded as introducing subjectmatter which extends beyond the content of the application as filed, contrary to the requirements of Article 123(2) EPC, because the resulting absorbent composite is not disclosed in the application as filed.

It is true that the test procedures for determining the deformation under load and the wicking index require a sample of the superabsorbent material to be sieved to a particle size between 300 and 600 µm (see page 6, lines 4 to 6, and page 7, lines 10 to 12, of the published application). However, there is no direct and unambiguous disclosure (see eg T 685/90, point 2 of the reasons) that it is this sieved superabsorbent material which is used in the absorbent composite.

3.3 The respondent referred to the passage on page 5 of the patent in suit, according to which the test procedures disclosed are for determining the deformation under load and the wicking index "for the superabsorbent materials of this invention" (page 5, lines 9 and 10) and to the passage on the same page 5 according to which the sample of the superabsorbent material used for determining the deformation under load "has been sieved to a particle size between 300 and 600 µm" (page 5, lines 46 and 47).

However, it cannot be unambiguously derived from these passages that the superabsorbent materials of the invention may consist of the sieved superabsorbent particles. On the contrary, the disclosure on page 5 conveys the impression that the superabsorbent material of the invention, ie the one used in the absorbent composite, must be sieved, and that it therefore also comprises particles that do not have a size within the range of 300 to 600 μm .

3.4 Accordingly, the auxiliary request cannot be allowed because claim 1 does not meet the requirements of Articles 84 and 123(2) EPC.

Order

For these reasons it is decided that:

- 1. The decision under appeal is set aside.
- The patent is revoked.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau