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**Datasheet for the decision
of 31 January 2007**

Case Number: T 0583/05 - 3.2.06

Application Number: 98907146.9

Publication Number: 0971666

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:

Absorbent articles comprising a material having a high vertical wicking capacity

Patentee:

THE PROCTER & GAMBLE COMPANY

Opponent:

SCA Hygiene Products AB
Kimberly-Clark Worldwide, Inc.

Headword:

-

Relevant legal provisions:

EPC Art. 83

Keyword:

"Disclosure - sufficiency - (no)"

Decisions cited:

-

Catchword:

-



Case Number: T 0583/05 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 31 January 2007

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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 1 March 2005
revoking European patent No. 0971666 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. L. de Crignis
W. Sekretaruk

Summary of Facts and Submissions

I. European Patent Nr. 0 971 666, granted on application Nr. 98907146.9, was revoked by decision of the opposition division posted on 1 March 2005. The revocation was based on the finding that although the patent in suit disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art and the subject-matter of claim 1 of the main request was novel, the subject-matter of claim 1 lacked an inventive step (Article 56 EPC) when considering

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as representing the closest prior art and taking into account the disclosure of

D4 DE-A-2 012 758.

II. The Appellant (patent proprietor) filed a notice of appeal against this decision on 29 April 2005, and paid the appeal fee simultaneously. On 7 July 2005 the statement of grounds of appeal was filed, accompanied by new sets of claims in accordance with a main request and first to fifth auxiliary requests and by

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which was already cited in the patent in suit and which should be considered as representing the closest prior art.

III. In a communication dated 20 September 2006, accompanying the summons to oral proceedings, the Board indicated that further discussion appeared to be necessary with regard to sufficiency of disclosure and also with regard to novelty of the subject-matter of claim 1 in view of D1.

IV. Oral proceedings were held on 31 January 2007. The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request or on one of the auxiliary requests 1 - 4, filed during the oral proceedings. Respondents I and II requested that the appeal be dismissed.

V. Claim 1 according to the Appellant's main request reads as follows:

"An absorbent article selected from diapers and training pants, and comprising an absorbent core having a crotch region, wherein

(i) the crotch region has an absorbent capacity of not more than 40 % of the absorbent core's total absorbent capacity as determined by Test Method A defined herein;

(ii) the crotch region comprises a material having at least one of the following values for the vertical wicking capacity:

(a) at least 15 g/g at height of 2 cm;

(b) at least 10 g/g at a height of 20 cm;

(c) at least 5 g/g at a height of 25 cm;

(d) at least 0.5 g/g at a height of 30 cm,

and

(iii) the front and/or rear regions of the core comprise a distinct storage material having higher capillary suction than the said material in the crotch region."

The subject-matter of claim 1 of the main and auxiliary requests differs with respect to the feature (iii) as follows:

- First auxiliary request:

"(iii) the front and/or rear regions of the core comprise a distinct storage material which is hydrogel-forming absorbent polymer."

- Second auxiliary request:

"(iii) the front and/or rear regions of the core comprise a storage material which is hydrogel-forming absorbent polymer comprising 50 to 95 % neutralised, slightly network crosslinked polyacrylic acid."

- Third auxiliary request:

"(iii) the front and/or rear regions of the core comprise a distinct storage material capable of desorbing the said material in the crotch region."

- Fourth auxiliary request:

"(iii) the front and/or rear regions of the core comprise a distinct storage material having higher capillary suction than the said material in the crotch region, wherein the front region comprises

a front panel and the rear region comprises a rear panel, both made of the storage material, and the crotch region comprises a centre section made of the said material in the crotch region, and the centre section overlies the front and back panels."

VI. In support of its requests, the Appellant argued in respect of sufficiency of disclosure as follows:

The absorbent article specified in claim 1 followed a new concept according to which the absorbency in the crotch region was reduced. Considering the feature (i) and its requirement that the absorbent core of the absorbent article should have a crotch region which "has an absorbent capacity of not more than 40 % of the absorbent core's total absorbent capacity" this feature was related to this concept.

The inventors had recognised that under "in-use"-conditions additional factors would influence the final value of the crotch region's absorbent capacity, as for example variations between the size and weight of the babies and in the kind of application of the article. That is why a test method was set up to assess a large number of babies which meant to quote the final value as an average of 30. Thus the differences had been taken into account and averaged out. In view of the "in-use" conditions which required that the total absorbent capacity of the absorbent core was not to be considered with respect to a fully soaked article but with respect to a "used" article, the test method A was developed as disclosed in paragraphs [00093] to [0098] of the patent in suit.

The test method A for the determination of the article's absorbent capacity of the crotch region and of the total absorbent core achieved a reliable and reproducible result. It was a complete absorbent article which was claimed and which was tested. Therefore, for one particular article the influence of further elements, like elastics or gasket cuffs, was always the same and thus had no influence on the reliability and reproducibility of the test result. Consequently the invention claimed was disclosed in a manner sufficiently clear and complete for it to be carried out by the skilled person.

For the test method A, the crotch point was determined before any movement could take place, thus subsequent movements did not influence the test results. The determination of the crotch region was dependent on the crotch point and thus did not represent an independent feature. Nowadays, all commercial diapers were unisex diapers and therefore considerations with respect to a boy/girl article did not apply. Hence, the definition and determination of the crotch point and crotch region were clear and sufficiently disclosed.

The specific time and leakage definitions as disclosed for the test method A had to be applied in order to arrive at reliable and reproducible results. In view of the last measurement step and the related time requirement, the documentary evidence in D1 as well as in D3 with regard to vertical wicking did not apply because it was related to dry articles and not to partly or fully loaded articles which were the subject of the test method specified in the patent in suit.

Therefore, the respondents had not complied with their burden of proof in this respect.

Considering feature (iii) and capillary suction, the skilled person would not have any difficulty in assessing the relative capillary suction abilities of two materials. No specific test in this regard was necessary since the requirement was a relative one.

VII. The Respondents argued essentially as follows:

The absorbent article of the patent in suit did not represent any new concept. The concept of having more absorbent capacity in the front and/or rear regions was already known from each of D1, D4 and D8.

With respect to sufficiency of disclosure, the test method A - specified in claim 1 for obtaining the article's total absorbent capacity and crotch region % capacity - was not appropriate to achieve reliable and reproducible results.

The determination of the absorbent capacity of the crotch region of an absorbent core depended on the identification of a crotch region/crotch point of the absorbent core. The identification of the crotch region was inadequately defined in the patent in suit. The crotch region would change substantially depending on how the diaper has been applied to the child. Therefore, identical diapers would have different crotch regions depending on how the diaper was fitted and whether it was applied to a boy or a girl. A consistent determination of the crotch region would, however, be

one of the preconditions for a reliable and reproducible test method and result.

Even if the crotch region could be reliably identified, different absorbent capacity results would be obtained for identical diapers:

- The measurement was supposed to be made after 1 g of fluid has leaked from the diapers. The time at which the diapers had leaked would vary very significantly. It depended not only
 - on the activity of the test children but also
 - on the fit of the diaper (tightly or loosely fitted),
 - on the fit of the panty, and
 - on the visual control and detection time.

- The last measurement step required that the determination be performed "within 15 minutes of removal of the article from the wearer" (page 15, lines 44/45). The delay time before measurement would significantly influence the test result because the distribution of fluid inevitably changed over this time interval. Evidence for such significant influence was derivable from for example D3, page 6, lines 3 to 6 in combination with Figures 11 and 12 or in D1, columns 18, lines 42 to 67. The latter reference indicated that wicking of a vertical distance of 5 cm in no more than about 5 min was preferred and for the vertical wicking absorbent capacity a determination method was suggested after 18 hours in order to allow the sample to vertically wick test fluid to equilibrium. Hence, the results

would significantly differ within the set time window of 15 minutes and the test method A could not lead to reliably reproducible results.

Furthermore, the patent in suit failed to disclose a single example of an absorbent core or an absorbent article falling within the scope of claim 1.

Moreover, with respect to feature (iii) of claim 1, "capillary suction" could be measured in differing ways, and materials might or might not exhibit higher or lower values depending on the measurement technique. Particularly for superabsorbent-containing material it would be impossible to determine the relative contribution of capillary action compared with the osmotic action of the superabsorbent material. Furthermore, the result would depend on the liquid used for the test conditions.

Reasons for the Decision

1. The appeal is admissible.
2. *Claim 1 of all requests*

Claim 1 of all requests includes the subject-matter of feature (i):

"the crotch region has an absorbent capacity of not more than 40 % of the absorbent core's total absorbent capacity as determined by Test Method A defined herein". At least this feature leads to an objection under Article 83 EPC for the following reason.

3. *Sufficiency*

3.1 Considering feature (i), sizing of the absorbent capacity of the crotch region depends on a comparison between the total capacity of the absorbent core and the crotch region capacity measured after articles have been applied to and used by a selected group of 30 babies according to the test method A disclosed in paragraphs [0093] to [0098] of the patent in suit. Thus, the test method A disclosed in the above identified paragraphs represents a specific individual test method which is chosen in order to link the total capacity and crotch region capacity to the in-use condition of the article. This has been confirmed by the appellant who emphasized that the "total capacity" of the absorbent core was not identical to the total capacity which could be obtained when the article were soaked in a fluid. Thus when determining the total absorbent capacity and the crotch region's absorbent capacity, the skilled person must exclusively rely on the test method A of the patent in suit.

3.2 The test method A relies firstly on the identification of the crotch region. The crotch region of the article is defined on originally filed page 5, lines 17 to 21 (corresponding to page 4, lines 14 - 17 of the B-publication). It is determined as corresponding to 50 % of the absorbent core's total length where the crotch point is located in the longitudinal centre of the crotch region.

3.2.1 The crotch point of the article is defined on originally filed page 5, lines 10 - 16 (corresponding to page 4, lines 8 - 13 of the B-publication). It is

determined by placing the article on a wearer in a standing position and then placing an extensible filament around the legs in a figure eight configuration. The point in the article corresponding to the point of intersection of the filament is deemed to be the crotch point of the article and of the absorbent core.

3.2.2 Thus, the determination of the crotch point and the crotch region is related to one particular article and one unique user (group) and application (method). It remains the question whether this determination leads to reliably reproducible results for the article in general when based on 30 babies in a certain weight range but without specifying the proportion of boys and girls. It is, however, not necessary to answer this question, since a further issue proved decisive, which is discussed below.

3.3 The test method A requires the panelists (babies) to wear the article until leakage by delivering synthetic urine at a delivery volume of 75 ml and delivery rate of 15 ml/sec in 10 min intervals. Between loads, the wearers should return to "normal activity".

For the determination of the total capacity of the absorbent article, leakage shall be reported once 1 gram of fluid leaked onto the cotton pants (first the pants are weighed and the specified leakage is recorded and then the articles shall be "immediately" weighed after removal of the pants).

Irrespective of the question how such determination can be carried out with the required accuracy, it is

further specified that for the determination of the crotch region capacity the crotch region should be cut out of the loaded article and weighed **within 15 min of removal** of the article from the wearer. In light of the respective disclosure of D1 and D3 the Board concurs with the respondents' view that at least the measuring results would differ significantly dependent on the point of time within the time frame of 15 minutes when they were established for the reasons explained here below.

- 3.4 D1 refers to the vertical wicking rate (column 18, lines 42 to 57) and to the vertical wicking absorbent capacity (column 18, line 58 - column 19, line 9) of open-celled absorbent polymeric foam materials, which are obtained by polymerizing High Internal Phase Emulsions (HIPE) as commonly known in the art. The patent in suit (page 13, lines 29 - 34) refers to these HIPE-derived foams as providing the requisite distribution properties and as representing a preferred storage material and distribution component. For these foams, D1 reports preferred vertical wicking rates of 5 cm of no more than about 5 minutes when wicking synthetic urine (column 18, lines 42 - 57). With respect to vertical wicking absorbent capacity, D1 refers to "such a determination is generally made after the sample has been allowed to vertically wick test fluid to equilibrium (e.g. after about 18 hours)" (column 18, lines 58 - 67). Hence, D1 requires the time for determination to be after about 18 hours of the sample being allowed to vertically wick test fluid to equilibrium. This demonstrates that such a long time is needed in order to reach equilibrium and this time is considerably longer than normally will be spent for

the application, use and test procedure in test method A altogether. Therefore, a time period of "within 15 minutes" on the one hand is indefinite with respect to the exact point of determination and thus refers to a multitude of distinct individual test results which could only be compared to corresponding values and on the other hand is too short to ensure that equilibrium is reached and thus the test results could be comparable anyhow.

- 3.5 D3 discloses absorbent webs and also stresses the capability of transporting fluid from one location on the web to another location on the web (page 6, lines 2 - 6). The vertical wicking properties of the absorbent webs are determined in the examples (page 6, lines 21/22). For the test procedure synthetic urine is applied and the vertical wicking capacity is defined as the amount absorbed at the end of 15 and 30 minutes (page 6, lines 38 - 40). Examples are disclosed (page 7 to 15) which are prepared for the determination of vertical wicking properties and fluid distribution. The vertical wicking properties are listed in Tables 1 to 7 and corresponding figures are disclosed. The data provided in Table 5 correspond to Figures 11 and 12 and refer to samples made of super inflated rayon fibers which are formed into a carded web. One such web is subjected to a crosslinking process and possesses greater vertical wicking rate than the other non-crosslinked web and the crosslinked webs possess improved fluid distribution properties at all distances tested. The patent in suit specifies for the storage material hydrophilic fibers as suitable and includes rayon (page 21, line 8) and crosslinked fibers (page 22, line 6 - 11) as examples. Hence, the corresponding

disclosure of D3 applies for these fibers. Table 5 and corresponding Figures 11 and 12 reveal that the vertical wicking rate is highest at the beginning of absorption (dry article) and changes significantly within the first minutes. However, it is also demonstrated that the test results remain time dependent as long as no maximum of absorbency has been reached. As pointed out above, it is not a fully saturated article which has to be considered in the present case. Accordingly, the determination of the vertical wicking rate or the fluid absorption by the remote areas will be significantly influenced by the time at which the determination is carried out. In consequence, the indefinite time requirement set out in test method A is not appropriate to allow a reliable and reproducible result for the disputed feature.

- 3.6 Thus, D1 as well as D3 exemplify independent of each other that the results of the crotch region capacity measurement would differ significantly dependent on when they were recorded. Since these results thus depend from arbitrary choices with respect to the time of determination, the skilled person is not in a position to establish whether the crotch region has an absorbent capacity of not more than 40 % of the averaged total absorbent capacity as defined in claim of the patent in suit. Accordingly, the skilled person is not in a position to know with certainty, and for any given absorbent article, whether this article is in the area covered by the claim, and therefore, the disclosure of the patent in suit is to be regarded as insufficient within the meaning of Article 83 EPC. The further features in dispute with respect to the article or the test method, therefore, need not be discussed.

4. *Auxiliary requests*

Claim 1 of all the auxiliary requests includes this feature (i). Since the main request is considered to be not allowable because of the presence of this requirement in claim 1, all the auxiliary requests are consequently not allowable under Article 83 EPC for the same reasons given above in respect of the main request.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau