**BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS**

**BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE**

**CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS**

**Internal distribution code:**
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [ ] To Chairmen
(D) [X] No distribution

# D E C I S I O N
## of 13 January 2004

**Case Number:** T 0387/01 - 3.2.6

**Application Number:** 92905711.5

**Publication Number:** 0625895

**IPC:** A61F 13/50

**Language of the proceedings:** EN

**Title of invention:**
Absorption body for an absorbing article

**Patentee:**
SCA Hygiene Products AB

**Opponents:**
The Procter & Gamble Company
Paul Hartmann AG

**Headword:**
-

**Relevant legal provisions:**
EPC Art. 83

**Keyword:**
"Sufficiency of disclosure - (no)"

**Decisions cited:**
T 0256/87, T 0409/91

**Catchword:**
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

**Case Number:** T 0387/01 - 3.2.6

# D E C I S I O N
**of the Technical Board of Appeal 3.2.6**
**of 13 January 2004**

**Appellant:** (Proprietor of the patent)
SCA Hygiene Products AB
S-405 03 Göteborg (SE)

**Representative:**
Fagerlin, Heléne
Albihns Stockholm AB
Box 5581
S-114 85 Stockholm (SE)

**Respondent I:** (Opponent I)
The Procter & Gamble Company
One Procter & Gamble Plaza
Cincinnati, Ohio 45202 (US)

**Representative:**
Canonici, Jean-Jaques
Procter & Gamble
European Service GmbH
D-65823 Schwalbach am Taunus (DE)

**Respondent II:** (Opponent II)
Paul Hartmann AG
Paul-Hartmann-Strasse 12
D-89522 Heidenheim (DE)

**Representative:**
Dreiss, Fuhlendorf, Steimle & Becker
Patentanwälte,
Postfach 10 37 62
D-70032 Stuttgart (DE)

**Decision under appeal:**
**Decision of the Opposition Division of the European Patent Office posted 26 January 2001 revoking European patent No. 0625895 pursuant to Article 102(1) EPC.**

**Composition of the Board:**

**Chairman:** P. Alting van Geusau
**Members:** G. Pricolo
M. B. Tardo-Dino

## Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division posted on 26 January 2001 to revoke European patent No. 0 625 895, granted in respect of European patent application No. 92905711.5.

In the decision under appeal the Opposition Division considered that the patent in suit did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. In the absence of a standardized method of determining the "critical bulk" the patent in suit should provide the skilled person with the necessary information to establish the claimed value for this parameter. However, in the process of determining the "critical bulk at 2.5 kPa" of said cellulose fluff described in the patent itself, information was lacking as to when a pressure of 2.5 kPa was to be applied onto a sample of cellulose fluff leading to different possible results of the "critical bulk" values.

II. The appellant (patentee) lodged an appeal, received at the EPO on 26 March 2001, against this decision and simultaneously paid the appeal fee. The statement setting out the grounds of appeal was received at the EPO on 31 May 2001.

III. In an annex to the summons for oral proceedings pursuant to Article 11(1) Rules of Procedure of the boards of appeal the Board expressed its preliminary opinion that there were doubts in respect of whether the invention was sufficiently disclosed because the patent in suit did also not disclose what kind of liquid was used for determining the critical bulk value,

the latter being dependent from the liquid used for its determination, as explained in document

A1: article "Characterizing absorbent materials", by E.V. Painter, Johnson & Johnson 1984,

filed by the appellant with letter dated 24 April 2002.

IV. Oral proceedings took place on 13 January 2004.

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 alternatively on the basis of one of the first to third auxiliary requests filed with letter dated 12 December 2003, with claim 1 of all requests as amended during the oral proceedings by way of replacement of the expression in the characterizing portion:
"a major part of the fibre structures"
with:
"the major part of the fibre structures".

The respondents (opponents I and II) requested that the appeal be dismissed.

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

"An absorbent body (3) intended to form the absorbent element of an absorbent article, such as a diaper or an incontinence guard, the absorbent body (3) including at least two mutually different cellulose fluffs and comprising a first absorbent layer (16) which, in use, is intended to face towards the wearer, and a second absorbent layer (17) which, in use, is intended to face away from the wearer, where the fibre structure of the

first absorbent layer (16) is generally comprised of a first type of cellulose fluff having an open structure and a low liquid-spreading ability, and where a major part of the fibre structure of the second absorbent layer (17) is comprised of another type of cellulose fluff having a higher liquid-spreading ability than the cellulose fluff in the first absorbent layer (16), and where the second absorbent layer (17) includes superabsorbent material, characterized in that the cellulose fluff of the first absorbent layer (16) has a critical bulk which exceeds 8 $cm^3/g$ at 2.5 kPa together with a fibre weight of between 180 and 600 mg/km, and in that the major part of the fibre structure of the second absorbent layer (17) has a critical bulk beneath 8 $cm^3/g$ at 2.5 kPa together with a fibre weight of between 140 and 190 mg/km, and in that the superabsorbent material in the second absorbent layer (17) is admixed substantially uniformly in the cellulose fluff within at least one region of the second layer (17)."

Similarly to claim 1 of the main request, claim 1 in accordance with all the auxiliary requests requires that the cellulose fluff of the first absorbent layer has a critical bulk which exceeds 8 $cm^3/g$ at 2.5 kPa and that the major part of the fibre structure of the second absorbent layer has a critical bulk beneath 8 cm3/g at 2.5 kPa.

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

It was clear from the disclosure of the patent in suit that the critical bulk was the bulk at which a given

cellulose fluff body neither collapsed nor expanded when wetted. Thus, a manner for determining the critical bulk of a fluff consisted in making samples having different degrees of compression, wetting them, and thereafter observing for each sample whether it expanded, collapsed or retained the same volume. The reference to a pressure of 2.5 kPa in claim 1 clearly implied that the sample was maintained under the same pressure before and during absorption of liquid. This was moreover confirmed by the disclosure of document A1 which referred to the measurement of "critical density", which was the inverse of the "critical bulk". As regards the experimental conditions, in the absence of any specific indications the skilled person would undoubtedly select normal conditions, such as e.g. ambient temperature. The size of the sample was of no major importance because the critical bulk was an inherent property of the cellulose material. Concerning the liquid used for the determination of the critical bulk, the skilled person would presume that the liquid would be one of those normally used for determining properties of absorbent materials, i.e. water, weak (0.9 or 1.0%) salt solution or synthetic urine. Water and saline solution gave essentially the same results, as shown by the test results filed with letter dated 5 October 2000 during opposition proceedings. Synthetic urine, which often was considered synonymous of 0.9% saline solution, also did not provide different results, as confirmed by the expert that carried out the above-mentioned tests for the patentee, although no specific test results were available. Furthermore, the patent specification disclosed methods for determining properties of absorbent layers in which a 0.9% NaCl solution was used as the testing liquid. Thus, there

was no reason for the skilled person to use a liquid different from that specifically referred to in the patent in suit when determining the critical bulk for a given fluff. The patent in suit also included examples of a cellulose fluff F1 having a critical bulk in excess of 8 $cm^3/g$ and of a cellulose fluff F2 having a critical bulk beneath 8 $cm^3/g$. A skilled person being in any doubt as regards the test method for determining the critical bulk would try the two specified fluffs to ascertain if values above and below 8 $cm^3/g$ were obtained respectively, thereby finding confirmation for the test method. Finally, it was clear from the specification of the patent in suit that the critical bulk was a property of the cellulose fluff alone, i.e. that in the process of determining the critical bulk a sample of only cellulose fluff had to be taken. The definition of the characterizing portion of claim 1 referring to the critical bulk of "the major part of the fibre structure of the second absorbent layer" was to be read in conjunction with the definition of the preamble according to which said major part of the fibre structure was comprised of cellulose fluff, whereby it was clear that the limitation for the critical bulk applied to the cellulose fluff only.

VII. Respondent I (opponent I) essentially submitted that it was not plausible that the combination of features defined in claim 1 represented a solution to the problem underlying the patent in suit, to provide an absorbent body having a high instantaneous liquid-absorption capacity and which prevented re-wetting, because the absorbent body did not consist only of cellulose fluff but also comprised other constituents such as superabsorbents and binders which affected the

critical bulk. Claim 1 required that the cellulose fluff of the first absorbent layer had a critical bulk exceeding 8 $cm^3/g$ at 2.5 kPa and at the same time that that the major part of the fibre structure of the second absorbent layer, which according to the definition of claim 1 comprised superabsorbent material, had a critical bulk beneath 8 $cm^3/g$ at 2.5 kPa. However, there was no teaching in the patent in suit in respect of how to determine the critical bulk of such a fibre structure comprising both fluff and superabsorbent material. As regards the measurement of the critical bulk, the disclosure of the patent in suit was insufficient because it did not mention anything in respect of the sample preparation which was an essential aspect of the process for determining the critical bulk, as explained in A1. Nor did the patent in suit mention how the sample should be treated when carrying out the test for measuring the critical bulk, in particular when the pressure of 2.5 kPa should be applied on to the sample. Furthermore, the patent in suit did not disclose what liquid was to be used when determining the critical bulk. Although as submitted by the appellant the skilled person would consider the use of synthetic urine for this purpose, the latter existed in different compositions and there was no guarantee that the same value of critical bulk was obtained independently from the composition of the synthetic urine used. In fact, document A1 disclosed that the surface tension of the liquid had an influence on the measured value of the critical bulk and documents

D11: US-A-4 699 619; and

D15: US-A-4 798 603;

showed that there existed compositions of synthetic urine having quite different values of surface tension. The examples of the patent in suit referring to fluffs F1 and F2 having a critical bulk in excess of and beneath 8 $cm^3/g$, respectively, could not help in determining what fluid was to be used because no precise value was given for the critical bulk of said fluffs F1 and F2.

VIII. Respondent II (opponent II) essentially agreed with respondent I and further submitted that the patent in suit was not clear in respect of whether the critical bulk was a property of the fluff per se or of the absorbent layer containing the fluff. In particular, claim 1 referred to the critical bulk of the major part of the fibre structure of the second absorbent layer and therefore it was not clear whether the critical bulk to be taken into consideration was that of the cellulose fluff in absence of any other components, or rather that of the layer consisting of a mixture of various components. Furthermore, the patent in suit was completely silent in respect of how to perform the test for determining the critical bulk. In particular, not only it did not specify when the pressure of 2.5 kPa was applied, but it also failed to specify the dimensions of the sample which played a role. In fact, when wetted, a thick fluff layer behaved in a manner different from a thin layer.

## Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 Amendments

Compared to claim 1 as granted, claim 1 of the main request is amended by way of deletion of the reference to a sanitary napkin and by way of replacement of the expression "a major part of the fibre structures" with "the major part of the fibre structures" in the characterizing portion.

The respondents did not raise any formal objections in respect of these amendments. Nor does the Board have any objections, in particular under Article 123(2) and (3) EPC.

2.2 Sufficiency of disclosure (Article 83 EPC)

2.2.1 Claim 1 of the patent in suit requires the cellulose fluff of the first absorbent layer to have a critical bulk which exceeds 8 $cm^3/g$ at 2.5 kPa and the major part of the fibre structure of the second absorbent layer to have a critical bulk beneath 8 $cm^3/g$.
In order to carry out the invention, the skilled person must be in a position to know whether he is working within the area covered by the claim (see e.g. T 256/87, point 10 of the reasons). In the present case, this means that the skilled person must be in a position to establish whether the critical bulk which is measured in particular for a given cellulose fluff can be effectively correlated to the limit of 8 $cm^3/g$ referred

to in claim 1. This presupposes that the skilled person utilizes a method for determining the critical bulk which is either the same or one that gives essentially the same results of the method which has been used as a basis for arriving at establishing a limit of 8 $cm^3/g$ in the patent in suit.

For determining the critical bulk of a given absorbent material there exists no standardized measurement procedure. Since also the claim does not include any information about how to measure the critical bulk, it is necessary to refer to the description of the patent in suit which discloses that the critical bulk is the bulk at which a given cellulose fluff pulp body will neither collapse nor expand when wetted (column 2, lines 32 to 34 and column 7, lines 46 to 51). No further details are given in respect of how to determine the critical bulk for a given fluff. The Board accepts that the above-mentioned disclosure includes technical information which is implicit for the skilled person, in particular the information that in the process of determining the critical bulk the sample of absorbent material is maintained under the same pressure before and during absorption of liquid (cf. the communication annexed to the summons for oral proceedings). However, the patent is silent about what liquid should be used when determining the critical bulk. In this respect, the Board follows the appellant's view that the skilled person would consider using for this purpose either water, 0.9% NaCl solution, or synthetic urine. Indeed, these liquids are those generally used when testing properties related to the absorbency of absorbent layers used in diapers or incontinence guards.

The Board further accepts, as submitted by the appellant on the basis of test results filed with letter of 5 October 2000, that the value of the critical bulk determined when water is used is essentially the same of that obtained when 0.9% NaCl solution is used. However, the appellant has filed no evidence concerning the use of synthetic urine for determining the critical bulk but only stated that the expert that performed the tests with water and 0.9% NaCl solution confirmed that the same results were obtained if synthetic urine was used. In this respect the Board observes that it is generally known that different synthetic urine compositions exist. Document D11, for instance, discloses (column 8, lines 19 and 24 and 39 to 49) first and second compositions, the first composition having a surface tension of 56 dynes/cm. D15 discloses a further composition having a surface tension of 32 dynes/cm (column 13, lines 1 to 4). When submitting that the same results are obtained if synthetic urine rather than water or 0.9% NaCl solution is used in the process of determining the critical bulk of a given cellulose fluff the appellant failed to take account of the above-mentioned aspect that different existing synthetic urine compositions have quite different properties. Since as explained by A1 the critical bulk depends *inter alia* upon the properties of the fluid absorbed (see page 190, third paragraph; A1 refers to the critical density which is the inverse of the critical bulk) and considering that the various synthetic urines have different properties, different values of the critical bulk are obtained for a same fluff depending on which synthetic urine is used. In particular, different results will be obtained if synthetic urines having different values of surface

tension are used. In fact, the surface tension is to be regarded on the basis of the disclosure of A1 as a property of the liquid which plays an effective role in determining the value of the critical bulk: A1 refers to the water or 1% saline solution as substantially equivalent liquids due to their small difference (0.3 dyne/cm) in surface tension, water being 72.3 dynes/cm at 23°C (page 191, first paragraph). Thus, if for example a synthetic urine which has a surface tension of 32 dynes/cm as disclosed by D15 is used in the process of determining the critical bulk of a given cellulose fluff, substantially different values of the critical bulk are to be expected than in case a synthetic urine is used which has a surface tension of 56 dynes/cm as disclosed by D11.

Therefore, in the absence of any specific indications in the patent in suit in respect of what fluid must be used for determining the critical bulk of a given cellulose fluff, the skilled person is left in a position in which he is unable to establish whether the value of critical bulk which he measures in practice is effectively correlated to the limit of 8 $cm^3/g$ referred to in claim 1. As a consequence, the skilled person is not in a position to know whether he is working within the area covered by the claim once he has selected a cellulose fluff from the plurality of those that are available in the prior art.

2.2.2 The appellant submitted that since the patent specification disclosed methods for determining properties of absorbent layers in which a 0.9% NaCl solution was used as the testing liquid there was no

reason to use a different liquid when performing the process of determining the critical bulk.

However, the specific disclosure of a 0.9% saline solution in determining the ability of an absorbent layer to drain liquid from another absorbent layer (column 8, lines 39 to 56 of the patent in suit) and in investigating the liquid-spreading abilities of absorbent bodies (column 10, lines 11 to 29) can only be regarded as evidence that the skilled person would take into consideration this liquid when faced with the problem of how to determine the critical bulk of a given cellulose fluff, not as evidence that the skilled person would exclude all other known test liquids. On the contrary, the use of synthetic urine would be regarded as particularly representative of the behaviour of the absorbent body in practice due to the fact that the latter is principally intended to absorb urine (according to the wording of claim 1, the absorbent article is preferably a diaper or an incontinence guard).

Furthermore, the disclosure in the patent in suit (example 1 on column 9) of a cellulose fluff F1 having a critical bulk in excess of 8 $cm^3/g$ and of a cellulose fluff F2 having a critical bulk beneath 8 $cm^3/g$ does not help to remove the fundamental ambiguity of the patent in suit concerning the liquid used in the process of determining the critical bulk. This disclosure of the patent in suit only tells the skilled person that the fluffs F1 and F2 meet the requirements of the patent in suit in respect of the critical bulk. However, the disclosure of the patent in suit must be such to allow the invention to be carried out within the whole area

that is claimed (see e.g. T 409/91, OJ 1994, 653, point 3.5 of the reasons). This means that the skilled person must be able to ascertain whether fluffs other than F1 and F2 would meet the requirements of the patent in suit in respect of the critical bulk. In the absence of precise values for the critical bulk of the fluffs F1 and F2, the information given by the patent in suit can only serve for excluding those liquids which, when used for determining the critical bulk of fluffs F1 and F2, lead to results which are not in conformity with the requirement that F1 and F2 have a critical bulk in excess of and beneath 8 $cm^3/g$, respectively. It cannot serve to give an unambiguous information about the liquid to be used because the different results obtained with different liquids might still fall within the ranges of below and above 8 $cm^3/g$ for the fluffs F1 and F2.

2.2.3 Finally, the Board notes that the teaching of the patent in suit includes a further source of ambiguity which leaves the skilled person in a position in which he does not know whether he is working within the area covered by the claims.

The description of the patent in suit discloses that the critical bulk is the bulk at which a given cellulose fluff pulp **body** will neither collapse nor expand when wetted (column 2, lines 32 to 34 and column 7, lines 46 to 51). This definition of critical bulk leaves open whether the cellulose fluff pulp body consists exclusively of cellulose fluff or whether it also includes additional components. Example 1 of the patent in suit (column 9) refers to the critical bulk of the cellulose fluffs F1 and F2 which are used for

preparing samples K1 and K2 by adding superabsorbent material to fluffs F1 and F2 (column 9, lines 18 to 21), and would thus appear to support the first interpretation of the above-mentioned definition. However, there is no clear basis in the patent in suit to conclude that the critical bulk of an absorbent body comprising cellulose fluff should be determined for the cellulose fluff only in the absence of any other components which will later be added to it for forming the final absorbent body.

The characterizing portion of claim 1 requires that "the major part of the fibre structure of the second absorbent layer has a critical bulk beneath 8 $cm^3/g$ at 2.5 kPa". Claim 1 does not specify whether with the expression "the major part of the fibre structure" it is intended to refer to a major part of the fibre structure constituted by cellulose fluff only, or rather to a major part of the fibre structure of the second absorbent layer which comprises both cellulose fluff and superabsorbent material. Nor does the definition in the preamble of claim 1 that "a major part of the fibre structure of the second absorbent layer is comprised of another type of cellulose fluff" clearly and unambiguously imply that said major part consists only of cellulose fluff.

Thus, the skilled person is left in the position that he does not know whether in order to perform the invention he should take into consideration the critical bulk of the second absorbent layer as a whole, thus including both the cellulose fluff and the superabsorbent material, or the critical bulk of said cellulose fluff only.

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 requests*

Considering that in all the auxiliary requests the main claim includes the same requirement of claim 1 of the main request that the cellulose fluff of the first absorbent layer has a critical bulk which exceeds 8 $cm^3/g$ at 2.5 kPa and that the major part of the fibre structure of the second absorbent layer has a critical bulk beneath 8 $cm^3/g$ at 2.5 kPa, and having regard to the above conclusion that this requirement in the context of the patent disclosure as a whole does not constitute a clear and unambiguous teaching for the skilled person so that the requirements of Article 83 are not met, the Board comes to the conclusion that the auxiliary requests are not allowable for the same reasons 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