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Datasheet for the decision of 6 May 2015

Case Number: T 1455/11 - 3.2.06

Application Number: 98109576.3

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IPC: A61F13/15, A61L15/60

Language of the proceedings: EN

Title of invention:
Absorbent article

Patent Proprietor:
NIPPON SHOKUBAI CO., LTD.

Opponents:
KIMBERLY-CLARK WORLDWIDE, INC.
BASF SE

Headword:

Relevant legal provisions:
EPC Art. 83

Keyword:
Sufficiency of disclosure - (no)

Decisions cited:

Catchword:

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Case Number: T 1455/11 - 3.2.06

D E C I S I O N
of Technical Board of Appeal 3.2.06
of 6 May 2015

Appellant: (Patent Proprietor)	NIPPON SHOKUBAI CO., LTD. 1-1, Koraibashi 4-chome Chuo-ku Osaka-shi, Osaka 541-0043 (JP)
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Respondent: (Opponent 1)	KIMBERLY-CLARK WORLDWIDE, INC. 401 North Lake Street Neenah WI 54956 (US)
Representative:	Davies, Christopher Robert Dehns St Bride's House 10 Salisbury Square London EC4Y 8JD (GB)
Respondent: (Opponent 2)	BASF SE 67056 Ludwigshafen (DE)
Representative:	Schröder, Jürgen BASF SE Global Intellectual Property GVX - C6 67056 Ludwigshafen (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 27 April 2011 revoking European patent No. 0884037 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	M. Harrison
Members:	T. Rosenblatt
	W. Ungler

Summary of Facts and Submissions

I. By its decision dated 27 April 2011 the opposition division revoked European patent No. 0 884 037.

The opposition division concluded that in regard to the determination of an average particle diameter defined in claim 1 of all requests, the patent did not disclose sufficient information to enable the skilled person to carry out the invention.

II. The appellant (patent proprietor) filed an appeal against this decision. With the appeal grounds the appellant submitted amended claims according to a main request and auxiliary requests 1 to 8.

III. In its reply to the appeal grounds the respondents (opponents 1 and 2) defended their objection upon which the opposition division decided to revoke the patent. Respondent-opponent 2 also reiterated a further objection under Article 83 EPC, presented already in its notice of opposition, and taken up in later submissions also by respondent-opponent 1.

IV. In a communication pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal, the Board informed the parties of its preliminary opinion on the case. In regard to the determination of the average particle diameter, the Board considered that the patent seemingly contained sufficient information for the skilled person to carry out the invention in this respect. In regard to the respondents' second objection, the Board expressed doubts as to whether the skilled person could carry out the invention.

V. Oral proceedings before the Board took place on 6 May 2015.

VI. The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained on the basis of the main request, or on the basis of one of the auxiliary requests 1 to 8 all filed with the statement of grounds of appeal.

VII. The respondents (opponents 1 and 2) requested that the appeal be dismissed.

VIII. Claim 1 according to the main request has the following wording:

"An absorbent article, comprising an absorbent layer, a liquid-permeable surface sheet, and a liquid-impermeable back sheet, wherein the absorbent layer includes an absorbent matter having a water-absorbent resin and a fibrous material, wherein a ratio by weight "α" of said water-absorbent resin, based on the total of the water-absorbent resin and the fibrous material, is in the range of 0.4 to 0.9, wherein the water-absorbent resin is a water-absorbent resin obtainable by thermally treating a water-absorbent resin precursor in the presence of a surface-crosslinking agent, wherein the water-absorbent resin precursor is obtainable by polymerizing or copolymerizing at least one monomer selected from the group consisting of (meth)acrylic acid and neutralized products thereof and has an average particle diameter in the range of 100 to 600 μm and a proportion of particles, with a particle diameter less than 106 μm, of not more than 10 % by weight, wherein the content of the water-absorbent resin per sheet of the absorbent article is 8 g or more:

characterized in that the water-absorbent resin in the absorbent article has a concentration absorption index of 35 or more as shown by the following equation (1):
concentration absorption index = $A(1-\alpha)+B\alpha \geq 35$ (1)
wherein
A(g/g) is an absorption capacity of the resin for an artificial urine under no load over a period of 60 minutes determined in accordance with the measurement described herein, and
B(g/g) is an absorption capacity of the resin for the artificial urine under a load of 50 g/cm^2 (about 4.9 kPa) over a period of 60 minutes determined in accordance with the measurement described herein, provided that the parameter A is at least 30(g/g) and the parameter B is at least 20(g/g), wherein the artificial urine is an aqueous solution having a composition of sodium sulphate of 0.2 weight %, potassium chloride of 0.2 weight %, magnesium chloride hexahydrate of 0.05 weight %, calcium chloride dihydrate of 0.025 weight %, ammonium dihydrogen phosphate of 0.085 weight %, and diammonium hydrogen phosphate of 0.015 weight %."

Claim 1 of auxiliary request 1 comprises the following amendment in the preamble (emphasis added by the Board):

"... and has an average particle diameter in the range of 100 to 600 µm and a proportion of particles, with a particle diameter less than 106 µm, of not more than 10 % by weight, **wherein the average particle diameter and the proportion of particles with a particle diameter less than 106 µm are measured by methods disclosed in JP-B-06-025209**, and wherein the content of the water-absorbent resin per sheet...".

Compared to the main request, claim 1 of auxiliary request 2 comprises the following amendment in the preamble (emphasis added by the Board):

"..., wherein the content of the water-absorbent resin per sheet of the absorbent article is **in the range of 10 to 20 g**; characterized in...".

Compared to the main request, claim 1 of auxiliary request 3 comprises the following amendments in the preamble (emphasis added by the Board):

"... wherein a ratio by weight "α" of said water-absorbent resin, based on the total of the water-absorbent resin and the fibrous material, is in the range of **0.5** to 0.9, ...,
wherein the content of the water-absorbent resin per sheet of the absorbent article is **in the range of 10 to 20 g**; characterized in...".

Claim 1 of auxiliary request 4 comprises the same amendment in the preamble as auxiliary request 2 and additionally the following features added to its characterising portion:

"...; in that the fibrous material is a hydrophilic fiber, and in that the absorbent matter includes a homogeneous mixture of the water-absorbent resin and the hydrophilic fiber".

Claim 1 of auxiliary request 5 comprises the same amendments in the preamble as auxiliary request 3 and additionally the amendment in the characterising portion introduced in auxiliary request 4.

Claim 1 of auxiliary request 6 comprises the same

amendment in the preamble as auxiliary request 2 and the following features added to its characterising portion:

"...; and in that the water-absorbent resin as used in the absorbent matter has an average particle diameter of less than 500 µm."

Claim 1 of auxiliary request 7 comprises the same amendment in the preamble as auxiliary request 2 and the following amendment in the characterising portion (emphasis added by the Board):

"... characterized in that the water-absorbent resin in the absorbent article has a concentration absorption index of 35 or more as shown by the following equation (1):
concentration absorption index = $A(1-\alpha)+B\alpha \geq$ **37** (1)".

Compared to auxiliary request 7, the only further amendment to claim 1 of auxiliary request 8 consists in the change of the limit value in equation (1) from 37 to 40.

IX. The appellant's arguments, as far as relevant to the present decision, may be summarised as follows (in the following the expression "CAI" is used for the feature "concentration absorption index"):

Main request

The patent, in particular the working examples, provided sufficient information to the skilled person how to carry out the invention. The invention did not relate to providing new water-absorbent resins. Rather the invention was based on the finding that in order to

obtain an absorbent article with improved absorption properties for a chosen weight ratio α of water-absorbent resin and fibrous material, the appropriate resin having the appropriate absorption capacities required by claim 1, had to be selected so as to comply with the requirement for the parameter CAI. Depending on a chosen weight ratio, α, of water-absorbent resin in the absorbent matter the selection of the resin had to be done so that the resin with given absorption capacities A and B would lead to a value for CAI of 35 or more. For low values of α, the term "A*(1-α)" in the formula for the calculation of CAI, which depended on the resin's absorption capacity under no load, A, was dominant. If α was large, the term B*α, depending on the resin's absorption capacity under a load, B, became more important (see also paragraph [0021] of the patent). Resins having the required properties, A, B and the size distribution parameters, were known as such. The patent disclosed for several values of α a number of examples demonstrating that with the appropriate resins the skilled person was enabled to obtain CAI-values in the claimed range and thereby absorbent articles with improved absorption properties. Even for α=0.9, two examples were given which met the requirement for CAI according to claim 1. According to the case law of the Boards of Appeal in regard to sufficiency of disclosure, the disclosure of only a single example falling within the claim was required.

X. The arguments of the respondents, as far as relevant to the present decision, may be summarised as follows:

Main request

Respondent-opponent 1 argued that the disclosed examples of water-absorbent resins led to embodiments

unpredictably falling inside or outside the claimed range, although all resins apparently met for example the average particle diameter criteria. For α=0.9, which according to paragraphs [0007] and [0009] was of particular practical importance, only two examples actually fell within claim 1. There was no general teaching of how other water-absorbent resins meeting the claimed requirements should be prepared.

Respondent-opponent 2 argued similarly and pointed out that the successful and the unsuccessful resins of the Examples were all obtained according to the same general indications for a production process for water-absorbent resin, which according to the description was supposed to allow resins to be obtained which fell within the claim, in particular in view of the type and amounts of monomer agents and the internal and surface-crosslinking agents to be used, see for example paragraphs [0041], [0047] and [0048]. However, only one of the surface-crosslinking agent compositions mentioned there appeared to result in water-absorbent resins falling within claim 1, whereas the claim was not limited to this.

Reasons for the Decision

Main request

1. It can be left undecided whether the objection concerning the determination of the average particle diameter of the resin precursor, based on which the opposition division concluded that the patent did not disclose the claimed invention in a manner sufficiently clear and complete for a skilled person to carry it

out, was justified or not. The Board anyway comes to the same result as the opposition division based on the second objection made against claim 1 under Article 83 EPC. This objection was originally raised in the opposition notice by opponent 2 but was not taken up by the opposition division in the impugned decision. This objection relates to the patent lacking sufficient information for the skilled person to carry out the invention over the whole scope claimed. More precisely, the patent does not comprise any teaching which would allow the skilled person to derive, without undue burden, absorbent articles falling within the scope of the claim using other resins than those used for the few working examples, in particular at the claim's upper limit of the weight ratio α=0.9. The reasons for this conclusion will become clear from the following consideration of the appellant's arguments.

2. The appellant's principal argument for refuting this objection was that the invention was based on the finding that absorbent articles with improved absorption properties could be provided if water-absorbent resins were selected so that the criteria for the CAI defined in claim 1 were fulfilled. Depending on the chosen weight ratio, α, of water-absorbent resin in the total of absorbent matter the selection of the resin had to be done so that, based on its particular absorption capacities A and B, the resin would achieve a value for CAI of 35 or more. The examples disclosed in the patent clearly demonstrated that such selection was possible and led to absorbent articles falling within the scope of the claim.

This argument is however not accepted for the following reasons.

The claim defines the water-absorbent resin as part of the water-absorbent matter of the claimed absorbent article in very broad terms: it requires that the resin shall be obtainable by thermally treating a resin precursor in the presence of an (unspecified) surface-crosslinking agent, whereby the precursor resin is obtainable by (co)polymerisation of at least one monomer selected from the group consisting of (meth)acrylic acid and neutralised products thereof. The resin also has to meet certain requirements for the particle diameter distribution and for the absorption capacities under no load and a specific load, A and B, respectively. All of these parameters per se may be determined according to the information contained in the patent (assuming, to the benefit of the appellant, that this holds true also for the parameters related to the particle diameter distribution).

However, the patent specification itself does not disclose or refer to any potentially available resin product having the required size and absorption capacity properties. That such resins meeting, in particular, the required conditions for values A and B were already known to the skilled person, as argued by the appellant, is not apparent from the description of the patent in suit and has not been backed up by any evidence. Thus, the skilled person only has the information on the preparation of the examples in the patent at his disposal. Thus, even if at a later date (after filing the patent application) it might have been shown that a particular single resin did meet the requirements of a resin falling within claim 1, this is not a teaching to the skilled person of the criteria required for identifying the suitability of any such resin.

Paragraphs [0035] to [0056] of the patent's description describe, in general terms, a production process for obtaining water-absorbent resins with which the claimed CAI should be achieved. This part of the description *inter alia* lists specific monomers and internally crosslinking agents ([0040]) usable for obtaining the resin precursor ([0038]), and first and second surface-crosslinking agents ([0046] to [0048]) which latter could be used, preferably jointly, for the (thermal) treatment of the precursor to obtain the final water-absorbent resin. Paragraphs [0080] to [0153] are then directed to specific embodiments. Table 1 summarises the properties of eleven specific embodiments, termed "Referential Examples" 1 to 11, of water-absorbent resins obtained according to the specific processes disclosed in paragraphs [0081] to [0106], corresponding essentially to the previously disclosed general process and carried out under specific processing conditions with specific agents selected from the lists mentioned in the above referred paragraphs and employed in amounts as mentioned also in the general description of the process. Table 1 also includes, for each of the thus-obtained resins, the measured values for the two absorption capacities A and B. For two values of α, i.e. α =0.5 and α=0.75, Tables 2 and 3 respectively summarise the absorption properties, including the respective CAI value, of Examples 1 to 21 of absorbent matter and the absorbent articles obtained by using the water-absorbent resins of the Referential Examples 1 to 11, see paragraphs [0107] to [0153].

Although all water-absorbent resins according to the Referential Examples 1 to 11 seemingly meet the claimed requirements for the average particle diameter, and assuming, to the benefit of the appellant, that e.g. the average particle diameter of the resin can be

determined on the basis of the information in the patent, only a very small number of the Examples anyway falls within the scope of claim 1. Among the results summarised in Tables 2 and 3, only Examples 1-3, 9, 10 for α=0.5 and Examples 11-13, 19 and 20 for α=0.75 fall within the scope of claim 1, since the respective water-absorbent resins present values for all three parameters A, B and CAI falling within the respective claimed ranges. Respondent-opponent 1 furthermore considered the case of α=0.9, i.e. concerning absorbent articles having a relatively high concentration of water-absorbent resin in the absorbent matter, lying at one end of the range claimed. The Board agrees that the absorption properties of such articles are indeed of particular interest, as confirmed by paragraphs [0007] and [0009] of the patent. The corresponding CAI values calculated from the values for the absorption capacities A and B of the water-absorbent resins of Referential Examples 1 to 11 (see Table 1) result in only two water-absorbent resins, corresponding to Referential Examples 1 and 9, which can be used in an absorbent article falling under the terms of claim 1. The only common feature between the resins of Referential Examples 1 and 9 is the specific composition of the surface-crosslinking agent (which is however anyway not defined in claim 1). Although all water-absorbent resins of the Referential Examples had been produced according to the information given in paragraphs [0035] to [0056], as pointed out by respondent-opponent 2, there are nevertheless no discernible criteria disclosed here which allow the skilled person to deduce why these products meet the claimed requirements compared to others that do not. A teaching allowing the skilled person to ascertain, without undue burden, why some of the obtained water-absorbent resins meet the required criteria and others

do not cannot be derived from the given examples. Thus, the skilled person is left with nothing more than seemingly an arbitrary choice, when attempting to find resins meeting the criteria in claim 1 across its whole scope.

The Board thus concludes that the patent only enables the skilled person to carry out very few isolated embodiments compared to the breadth of the scope of claim 1. Since the patent does not allow any more general teaching to be derived from the successes and failures disclosed, finding other solutions falling within the scope of claim 1 amounts to nothing less than a research program requiring far more than just a simple series of trials guided by failures. This amounts to an undue burden for the skilled person.

The invention can therefore not be carried out by simply selecting an appropriate allegedly known water-absorbent resin with absorption capacities A and B fitted to a given weight ratio, α, of resin in the absorbent matter so as to obtain the claimed CAI of 35 or more.

3. The appellant further argued that it was accepted according to the case law of the Boards of Appeal that a single example is sufficient to comply with the requirement of sufficiency of disclosure (Article 83 EPC). The case law of the Boards of Appeal however does not state this as a criteria which holds for every case. In certain cases it can indeed be sufficient to provide only a single embodiment in order to satisfy the requirement of Article 83 EPC, however this has the proviso that the skilled person is enabled to find other embodiments falling within the whole scope of the claim based on the information in the patent and common

general knowledge (see for example section II.C.4.4 in Case Law of the Boards of Appeal of the EPO, 7th Edition, 2013). This is however not the case here for the reasons already given above.

4. The Board thus concludes that the subject-matter of claim 1 of the main request does not meet the requirement of Article 83 EPC. The appellant's main request is therefore not allowable.

Auxiliary requests 1 to 8

5. The amendments included within claim 1 of auxiliary requests 1 to 8 do not alter the above finding, since the amendments address only other issues. It may be added that whilst the third and fifth auxiliary requests define a more restricted range of the weight ratio, α, this restriction only concerns the lower starting point of the range, whereas the range still extends to $\alpha = 0.9$. Despite being offered the opportunity to do so, the appellant chose not to add any further comment or argument on auxiliary requests 1 to 8. Thus, the Board concludes that the subject-matter of claim 1 of the respective auxiliary requests 1 to 8 does not meet the requirement of Article 83 EPC for the same reasons that apply to claim 1 of the main request. It follows that auxiliary requests 1 to 8 are also not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Schneider M. Harrison

Decision electronically authenticated