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D E C I S I O N
of 10 January 1996

Case Number: T 1052/93 - 3.3.1

Application Number: 85302917.1

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IPC: C11D 3/39

Language of the proceedings: EN

Title of invention:
Bleach products

Patentee:
UNILEVER N.V.

Opponent:
Henkel Kommanditgesellschaft auf Aktien

Headword:
Bleach products/UNILEVER

Relevant legal provisions:
EPC Art. 54(2), 56, 87(1), 123(2)(3)

Keyword:
"Priority - no effect"
"Novelty of main request - yes"
"Inventive step of main request - yes"

Decisions cited:
T 0073/88; G 0003/93

Catchword:
-



Case Number: T 1052/93 - 3.3.1

DECISION
of the Technical Board of Appeal 3.3.1
of 10 January 1996

Appellant: Henkel
(Opponent) Kommanditgesellschaft auf Aktien
TP/Patentabteilung
D-40191 Düsseldorf (DE)

Representative: -

Respondent: UNILEVER N.V.
(Proprietor of the patent) Weena 455
NL-3013 AL Rotterdam (NL)

Representative: Ford, Michael Frederick
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 21 October 1993
rejecting the opposition filed against European
patent No. 0 163 417 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: R. K. Spangenberg
Members: P. P. Bracke
S. C. Perryman

Summary of Facts and Submissions

I. This appeal is from the Opposition Division's decision rejecting the opposition against European patent No. 0 163 417, which was granted on the basis of European patent application No. 85 302 917.1, filed on 25 April 1985 and claiming priority from GB 8 410 826 of 27 April 1984.

II. The Opposition Division found that the patent in suit was novel and inventive over the cited prior art, especially over documents

(3) EP-A-0 018 678 and

(7) EP-A-0 122 763.

III. A statement of grounds of appeal was received on 25 February 1994. In reply, the Respondent (Proprietor of the patent) filed three further sets of claims by way of a first, second, and third auxiliary request. Oral proceedings were held on 10 January 1996, during which the Respondent filed an amendment to Claim 1 as granted, the amended claim then reading (emphasis added):

"A wash adjunct product comprising a particulate bleach composition consisting essentially of sodium perborate and an activator therefor, which activator on reaction with the perborate generates a percarboxylic acid of which the corresponding carboxylic acid is malodorous, the composition being contained within a closed bag of sheet material **which is porous to air** and has pores large enough to render it water-permeable but small enough to confine the particulate bleaching composition within the bag, characterised in that at least 25 mole per cent of the sodium perborate in the particulate bleach composition is in monohydrate form."

IV. In his written submissions and during the oral proceedings the Appellant (Opponent) argued that the invention described in the application was not the same as the one described in the priority document; hence the patent in suit was not entitled to the claimed priority date and document (7) was to be considered as state of the art according to Article 54 (2) EPC.

He also submitted that all the features of the claimed wash adjunct products were known from Example IV of document (3).

Additionally, he argued that it could be expected that by replacing the sodium perborate tetrahydrate in the compositions described in document (3) by the monohydrate the solubility rate of the perborate in water and the amount of active oxygen would be increased and that the suppression of malodour by this replacement was to be regarded as a "bonus" effect, which could not render the product claim inventive.

Finally, in his opinion either one of documents (3) and (7) could be regarded as representing the closest state of the art, since the wash adjunct products described in each document differed from the claimed ones in only one parameter. In respect of document (7) he argued that the claimed adjuncts differed from those described therein only by the fact that as porous container a porous bag of sheet material was chosen. Since such bags were known as containers for bleach products from, for example,

document (8) EP-0 070 066,

he concluded that the claimed wash adjunct products were obvious.

V. The Respondent contested that the patent in suit would not be entitled to the claimed priority date. Furthermore, he submitted that sodium perborate monohydrate was not mentioned in document (3) and, consequently, the claimed wash adjunct products were not described in this document. Additionally, he argued that if the effect of the malodour suppression could not render the product claim inventive, this would lead to any provision of an alternative product always being obvious, regardless of any showing of unexpected advantages.

Finally, at the oral proceedings the Respondent stated that the requirement of Claim 1 that the sheet material is porous to air is to be interpreted as also being porous for atmospheric moisture.

VI. The Appellant requested that the decision under appeal be set aside and that the European patent be revoked.

The Respondent requested as main request that the decision under appeal be set aside and the patent be maintained with the claim 1 as granted as amended on the page 25 submitted at the oral proceedings on 10 January 1996, the other claims as granted, and the description as granted subject to page 2 being amended as on the page 2 submitted at the oral proceedings on 10 January 1996, and as auxiliary requests that the patent be maintained on the basis of the first, second or third auxiliary request submitted with letter dated 13 July 1994.

VII. At the conclusion of the oral proceedings, the Chairman announced the Board's decision to allow the main request.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Amendments*

The amendment made in Claim 1 is based upon page 4, lines 9 to 11, of the originally filed application (see the patent as granted, page 2, lines 58 to 59). This amendment amounts to a further restriction of the protection conferred. Consequently, the amendment does not contravene Article 123(2) and (3) EPC.

3. *Construction of Claim 1*

During the oral proceedings the parties relied upon different interpretations of certain expressions in the present Claim 1. To the extent that it is necessary to establish the proper construction of that claim in order to decide the issues arising under Article 100(a) EPC, the Board must decide how this claim should be properly construed.

- 3.1 Claim 1 as amended is directed to wash adjunct products with the bleach composition being contained within a closed bag of sheet material **which is porous to air** and has pores large enough to render it water-permeable but small enough to confine the particulate bleaching composition within the bag. Taking into account the amendment made to Claim 1, the Board considers that on its proper construction Claim 1 requires that both the bag and the sheet material of which it is made must be porous to air, including atmospheric moisture, i.e. water vapour. That water vapour is embraced by the term

air appears both from the bag being permeable to liquid water in the wash, and from the passage (referring to the page numbering of the granted specification) on page 6, lines 24 and 25 that "the bag contents were open to the atmosphere through the porous bag walls". Thus a wash adjunct using a bag with a coating making it impermeable to air, including water vapour, falls outside of the claim. This interpretation is also the only one consistent with the statement of the Respondent (see point V).

4. *Priority*

It is an essential feature of the claimed wash adjunct products that the bags contain sodium perborate monohydrate in conjunction with an activator generating, on reaction with the perborate, a percarboxylic acid of which the corresponding carboxylic acid is malodorous.

In the priority document, however, it is only said that

- (i) such bags may comprise sodium perborate and an activator,
- (ii) the perborate may be present in both tetrahydrate and monohydrate form, the monohydrate form being of special interest because of its greater water-solubility and its higher level of available oxygen and
- (iii) the activator generally contains N-acyl or O-acyl residues.

(see Claim 1, page 3, first paragraph and page 3, lines 21 to 35)

Although this document mentions in the first paragraph of page 4 certain activators generating, on reaction with the perborate, a percarboxylic acid of which the corresponding carboxylic acid is malodorous, these specific compounds cannot be considered to disclose the broad group of activators functionally defined in the present Claim 1.

Since the Claim 1 put forward is directed to a different invention to that disclosed in the priority document, it cannot enjoy priority under Article 87(1) EPC (see G 3/93, OJ EPO, 1995, 18, item 8).

In consequence, in the Board's judgment the content of document (7), published before the filing date of the patent in suit, forms part of the state of the art according to Article 54(2) EPC.

Furthermore, the Board observes that it cannot agree with the Respondent's submission that Claim 1 was entitled to enjoy priority, even though the priority document nowhere disclosed the feature of Claim 1 that the minimum for sodium perborate in monohydrate form was 25%. Example 9, appearing for the first time in the application as filed at the EPO, mentioned this feature for the first time, and made clear that it related critically to the suppression of malodour. This has been argued as being an important feature of the invention. In these circumstances the Board considers that there can be no question of applying in this case any principle to be derived from T 73/88 (OJ EPO, 1992, 557), to the effect that a claim can enjoy priority despite containing a limitation not disclosed in the priority document provided this limitation does not relate to an essential feature of the invention.

5. *Novelty*

5.1 Document (3) describes bleach products comprising a per-compound, e.g. sodium perborate, and an activator, such as TAED (tetraacetyl ethylene diamine), contained in a closed bag of fibrous material provided with a protective water-impermeable coating removable in water. Consequently, the wash adjuncts products of present Claim 1 differ from the bleach products suggested by document (3) at least by the fact that the bags are of sheet material which is porous to air and, therefore, also to atmospheric moisture (see point 3.1 above).

5.2 Whereas Examples I and II of document (3) specify that the sodium perborate is in tetrahydrate form, example IV of document (3), particularly relied on by the appellant, specifies only sodium perborate without making reference to any degree of hydration. The example describes a polyester fibre bag which is filled with sodium perborate and TAED. The bag was heat-sealed and then coated with stearic acid. The appellant argued that the intermediate product formed before coating with stearic acid destroyed the novelty of Claim 1. The Board does not agree, firstly because there is no unambiguous disclosure of the monohydrate form of sodium perborate being used.

5.3 Secondly there is no unambiguous disclosure of the requirement of Claim 1 that the pores are small enough to confine the particulate bleach composition within the bag. Whereas document (3) at page 3, line 36 to page 4, line 3 states that "The sheet material used should have a pore size such that, before applying the protective coating, there is no appreciable leaking of the bleach composition through the material of the bags.." it also says on page 3, lines 23 to 25 "...the protective coating prevents dusting out of the powdered alkaline

bleach composition through the pores during manual handling..". The requirement that the bag does not appreciably leak until coated, is obviously less stringent than the requirement of Claim 1 that the pores of the bag should be small enough to confine the particulate bleaching composition within the bag and, consequently, it cannot be assumed that by following the teaching of Example IV of document (3) bags would be obtained having a pore size as required by Claim 1.

5.4 As an indication that the intermediate uncoated product of Example IV of document (3) met all the requirements of Claim 1, the Appellant referred to the statement in Example 3 of the patent in suit that the comparison bag according to document (3) differed from the claimed ones only by its coating. However, it was only said in Example 3 of the patent in suit that the comparison bag was **in accordance** with document (3), without specifying that such bag would correspond with a bag described in an example of that document, let alone, that it would correspond with the bag of Example IV thereof. Consequently, the Board estimates that this statement cannot be considered as an indication that the uncoated product of Example IV of document (3) would meet all the requirements of Claim 1, let alone, that the sodium perborate would be in the monohydrate form.

5.5 None of the other cited documents discloses the combination of all the features of Claim 1. This was not contested by the Appellant. The Board therefore holds that the claimed wash adjunct products are novel in respect of the cited state of the art.

6. *Inventive step*

6.1 Since document (3) as well as document (7) describe bleach compositions containing a perborate and an activator therefor in a container through which a solution of the percompound and the activator may leach out, the Board can agree with the view expressed by the Appellant that either document may be considered as representing the closest state of the art. It will therefore consider the issue of inventive step starting from each of these documents.

6.2 In respect of document (3), it was observed in the description of the patent in suit that bags containing an activator generating peracetic acid, e.g. TAED, and sodium perborate tetrahydrate have the disadvantage that an unpleasant odour can develop **when the bag contents are open to the atmosphere through the porous bag walls** (page 6, lines 21 to 26), and in the passage on page 6, lines 30 to 33; it is said that the problem underlying the invention was the reduction of the development of malodour **in such bags** and, more generally, in any such bag containing an activator whose ultimate decomposition product is a malodorous carboxylic acid.

6.3 The Board infers from this statement that the malodour problem only arises **after** omission of the coating step required for the manufacturing of the wash adjunct product disclosed e.g. in Example IV of document (3). In respect of this state of the art, therefore, the technical problem to be solved cannot be stated as being the avoidance of malodour, though the avoidance of malodour can be considered as an additional requirement that must be fulfilled in any acceptable solution to some problem that does exist in the prior art. Over document (3) the problem to be solved can, however, be stated to be providing an improved combination of

container and bleach product, since the patent in suit asserts that the claimed combination of container and bleach product has a better bleaching performance at washing temperature below 60°C, includes an uncoated, hence simpler, bag and does not suffer from other disadvantages, such as giving rise to malodour during storage.

- 6.4 According to Claim 1, the patent in suit proposes to solve this problem essentially by providing at least 25 mole per cent of the sodium perborate contained in the porous bag defined in Claim 1 in the monohydrate form (see also page 6, lines 13, 14, 30 and 31).
- 6.5 The solution of the problem by the claimed products has been made credible in the patent in suit by the comparative data contained in Examples 3 and 4, by the "triad test" data presented in Examples 8 and 9 and by the data obtained under "double blind" conditions described in Example 10. In addition, it is immediately apparent that the omission of the coating results in a product which can be more easily manufactured.
- 6.6 The Board therefore holds that the product according to the patent in suit indeed solves the problem of providing an improved combination of container and bleach product.
- 6.7 It is therefore to be examined whether this solution to the stated technical problem was suggested by the cited state of the art. According to the Appellant, such suggestions were to be found in documents (3), (7) and (8).

6.7.1 As already mentioned, document (3) is concerned with bleach products comprising a percompound, e.g. an alkali metal perborate, and an activator therefor contained in a water-insoluble but water-permeable bag of fibrous material with a pore size as defined in present claim 1, but being provided with a protective water-impermeable coating removable by water at 30-75°C, thus preventing the access of atmospheric moisture to the bleach composition (page 3, lines 3 to 7, lines 23 to 28, page 3, line 30 to page 4, line 24, page 6, lines 17 to 20, and page 6, line 37 to page 7, line 4). This document also teaches that with the described wash adjunct products the performance of percompound bleaches and of the washing in general may be optimised (page 2, line 34 to page 3, line 2). The whole tenor of document (3) is to emphasize the need for a coating, and it contains no suggestion that omission of the coating might lead to any improvement. It was only the tests made in the patent in suit that showed such improvement.

6.7.2 Document (7) describes storage-stable particulate sodium perborate monohydrate having an activator adsorbed therein (page 2, lines 32 to 34). Furthermore, it is taught on page 14, lines 8 to 15, that, especially when the persalt/activator is employed as a bleach additive, it can be convenient to enclose it within a water-soluble or water-dispersible sachet or in a porous container through which a solution of percompounds can leach out into the wash or disinfection liquor. Starting from document (3) a skilled person might hope to achieve an improved storage stability by using this activator in a **coated** bag, but nothing would lead to the use of an **uncoated** bag.

- 6.7.3 Document (2) relates to controlled release laundry bleach products contained in closed bags comprising as bleach composition a hydrotropic or a hydrophillic peroxy acid bleach **and a bleach release controlling agent** (page 1, lines 4 to 13, page 3, first paragraph). Document (3) is mentioned therein as background art (page 20, lines 2 to 10), and it is stated that it was an object of the invention to provide a bleach product which does not require a coated bag (page 2, lines 16 to 18). This object is said to be achieved by using, together with certain peroxy acid bleaches (comprising, *inter alia*, very specific percompounds other than perborates), a bleach release-delaying agent consisting of specific surfactants (page 14, lines 21 to 31) in an amount of 10 to 60%, based on the bleaching composition (page 10, lines 27 to 28). Document (8) expressly states that a container which is porous to air would only be suitable with the particular bleach composition disclosed in that document. The Board, therefore, sees no reason why the specific solution provided by document (8) would lead a skilled person starting from document (3) to come to the quite different solution now claimed.
- 6.8 Starting from document (7), the problem to be solved can be formulated as finding a suitable delivery vehicle for the bleach product.
- 6.8.1 According to Claim 1, the patent in suit proposes to solve this problem essentially by using the uncoated bag defined therein. It is immediately apparent, that this problem is thereby solved. The Board, however, cannot accept the Appellant's submission that this solution was obvious.

6.8.2 Document (7) suggests two types of sachets or bags, but not specifically the coated bag of document (3). Whereas it might be obvious that the coated bag of document (3) would also be possible, the possibility mentioned in document (7) would not, in the Board's view, suggest a porous bag. Rather, this view of the Appellant's is inspired by hindsight. In the context of document (7) where two types of bags or sachets have already been mentioned, the porous container suggests rather a more solid means, and it remains quite open whether this might not need some form of covering for the pores during the stages before it is actually put to use. The Board, therefore, sees no reason why given the problem of finding a suitable delivery vehicle for the composition of document (7) the skilled person would come up, in view of the disclosure in document (3), with the solution now claimed. As already mentioned in point 6.7.3 above, document (8) proposes a porous bag only for a very specific bleach product which is quite different from that disclosed in document (7). Therefore the disclosure of this document would also not have suggested to solve the above problem in the way proposed by the present Claim 1.

6.9 In respect of the Appellant's submission that the present Claim 1 is directed to a product as such, which must only be suitable for use as a wash adjunct product, but may otherwise be an obvious intermediate product, which a skilled person would have made in view of document (3), Example IV, the Board observes the following:

Document (3) says at page 4, lines 31 to 36, that the coating may be applied to the sheet material before or after forming the bags, and that it can also be applied by dipping the filled bag or by applying the coating with a brush. It does not appear to the Board that in

any commercial scale production resulting from a combination of the teachings of documents (3) and (7), a filled but uncoated bag suitable as a wash adjunct would inevitably be created as an intermediate product. Example IV of document (3) is clearly an example for experimental purposes. The Board cannot, therefore, accept, in view of the remote possibility implied by the teaching of document (3), that a skilled person would inevitably have made such a product, even without seeking to solve the above-stated technical problem.

6.10 Consequently, regardless of the document chosen as being representative for the closest state of the art, the subject-matter of Claim 1 is not obvious to a person skilled in the art within the meaning of Article 56 EPC.

7. Claims 2 to 19 as granted relate to preferred embodiments of the subject-matter according to Claim 1. The description as amended is in conformity with the amended statement of claim. For these reasons, the patent can be maintained on the basis of the main request.

Auxiliary requests

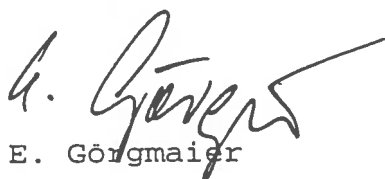
8. In the light of above, there is no need to consider the auxiliary requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent with the claim 1 as granted as amended on the page 25 submitted at the oral proceedings on 10 January 1996, the other claims as granted, and the description as granted subject to page 2 being amended as on the page 2 submitted at the oral proceedings on 10 January 1996.

The Registrar:


E. Görgmaier

The Chairman:


R. Spangenberg

