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**Datasheet for the decision  
of 30 October 2009**

**Case Number:** T 0485/08 - 3.3.06

**Application Number:** 99958881.7

**Publication Number:** 1147169

**IPC:** C11D 3/00

**Language of the proceedings:** EN

**Title of invention:**  
Bleaching compositions

**Patentee:**  
THE PROCTER & GAMBLE COMPANY

**Opponent:**  
Henkel AG & Co. KGaA

**Headword:**  
Pre-formed peroxy-carboxylic acid/PROCTER & GAMBLE

**Relevant legal provisions:**  
EPC Art. 56

**Relevant legal provisions (EPC 1973):**  
-

**Keyword:**  
"Inventive step (all requests) (no) - obvious to try"

**Decisions cited:**  
-

**Catchword:**  
-



Case Number: T 0485/08 - 3.3.06

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.06  
of 30 October 2009

**Appellant:** Henkel AG & Co. KGaA  
(Opponent) Patente (VTP)  
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**Representative:** -

**Representative:** THE PROCTER & GAMBLE COMPANY  
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**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
14 January 2008 concerning maintenance of  
European patent No. 1147169 in amended form.

**Composition of the Board:**

**Chairman:** P.-P. Bracke  
**Members:** L. Li Voti  
J. Geschwind

## Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division to maintain in amended form the European patent no. 1 147 169 concerning a liquid aqueous bleaching composition.

II. In its notice of opposition the Opponent sought revocation of the patent on the grounds of Article 100(a) EPC because of lack of novelty and inventive step of the claimed subject-matter.

The Opponent referred during the opposition proceedings *inter alia* to the following document:

(1): EP-A-442 549.

III. As regards the then pending main request the Opposition Division found in its decision *inter alia* that

- document (1) represented the closest prior art;
- the experimental report of 11 August 2004 showed as a clear trend that a reduction of the surfactant concentration within the claimed range in the absence of electrolytes led to an unexpected increase of the chemical stability;
- document (1) did not contain any hint to the skilled person that a chemically and physical stable composition could be obtained in the absence of electrolytes by reducing the amount of surfactant to below 4% by weight;

- therefore, the claimed subject-matter involved an inventive step.

IV. An appeal was filed against this decision by the Opponent (Appellant).

The Respondent (Patent Proprietor) submitted with the letter of 13 October 2008 a set of amended claims according to the first auxiliary request.

Oral proceedings were held before the Board on 30 October 2009.

V. Claim 1 of the set of claims according to the **main request**, corresponding to the set of claims found by the Opposition Division to comply with the requirements of the EPC, reads as follows:

"1. A liquid aqueous bleaching composition having a pH of below pH 7 comprising: a pre-formed peroxy-carboxylic acid which is phthalimido perhexanoic acid (PAP); and from 0.01% to 4% by weight of surfactant, wherein the solubility of the phthalimido perhexanoic acid in the aqueous composition, when measured at 20°C, is from 50ppm to 800ppm."

Dependent claims 2 to 7 relate to specific embodiments of the subject-matter of claim 1.

The set of claims according to the **first auxiliary request** differs from that according to the main request only insofar as the concentration of surfactant in claim 1 is limited to "from 0.2% to 3% by weight".

VI. The Appellant submitted in writing and orally *inter alia* that

- document (1) concerned the same technical problem dealt with in the patent in suit, i.e. the provision of a chemically and physically stable aqueous liquid bleaching composition containing PAP;

- the experimental evidence submitted with letter of 11 August 2004 did not contain any comparison with respect to a composition as envisaged explicitly by document (1), for example one having a concentration of surfactants of 2% by weight or of more than 4% by weight; moreover, the evidence did not report the complete formulation of the tested compositions, which could contain other components capable of influencing the chemical stability; therefore, the submitted evidence did not contain any comparison over the closest prior art;

- moreover, the alleged trend in chemical stability could not be recognised from the experimental evidence submitted on the basis of the only two surfactant concentrations tested; to the contrary, the tested compositions having a greater amount of surfactant were the most stable in absolute terms;

- therefore, it had not been credibly shown that by reducing the amount of surfactant the chemical stability of the composition was improved;

- no comparative tests had been submitted with regard to the safety on fabrics of the claimed compositions;

- the technical problem underlying the invention thus consisted only in the provision of an alternative aqueous liquid bleaching composition containing PAP;
- in the light of the teaching of document (1), the skilled person would have expected to obtain a chemically and physically stable composition by operating within the whole range of compositions encompassed by the teaching of this document, which teaching included compositions having a concentration of surfactants of only 2% by weight;
- moreover, the subject-matter claimed did not exclude the presence of electrolytes as used in document (1) and even the description of the patent in suit indicated phosphates, which are electrolytes, as possible optional components;
- furthermore, it was undisputed that the solubility of the PAP indicated in the claim did not contribute to the solution of the technical problem underlying the invention and that at the priority date of the patent in suit there existed PAPs having such a solubility;
- therefore, in the light of the teaching of document (1), it would have been obvious to the skilled person, faced with the technical problem of providing an alternative liquid bleaching composition containing PAP, to try a composition having all the features of claim 1;
- the claimed subject-matter thus lacked an inventive step.

VII. The Respondent submitted in writing and orally that

- the invention intended to provide a composition which was *inter alia* safe on the fabrics but not better in this respect than prior art compositions;

- the PAP solubility indicated in claim 1 identified only PAPs which could be suspended in the liquid aqueous composition;

- document (1) concerned mainly the provision of a composition having better suspending stability; therefore, the presence of an electrolyte was essential;

- the examples of this document contained only concentrations of surfactant above 4% by weight and this document did not contain any teaching to use less surfactant for improving the chemical stability;

- the experimental evidence of 11 August 2004 showed as a clear trend that a reduction of the surfactant content brought about an unexpected increase of the chemical stability in terms of a reduction of the relative PAP loss; moreover, the conditions used in this evidence for testing the chemical stability was comparable to that indicated in the patent in suit; the burden of proof thus was on the Appellant to show that the evidence was not correct;

- since document (1) did not suggest using amounts of surfactants as claimed in order to solve the technical problem underlying the invention, the claimed subject-matter was inventive over the teaching of the cited prior art.

- VIII. The Appellant requests that the decision under appeal be set aside and that the patent be revoked.
- IX. The Respondent requests that the appeal be dismissed or, in the alternative, that the patent be maintained on the basis of claims 1 to 7 according to the first auxiliary request submitted with letter of 13 October 2008.

### **Reasons for the Decision**

1. *Respondent's main request*
- 1.1 Inventive step
- 1.1.1 The invention of claim 1 relates to an aqueous liquid bleaching composition containing PAP.

As explained in the patent in suit, it was known in the art that halogen bleach-containing compositions (typically hypochlorite) were relatively aggressive to fabrics and might cause damage when used in relatively high concentration and/or after repeated usage. Moreover, while colour and fabric damage could be minimised by employing milder oxygen bleaches such as hydrogen peroxide, the bleach performance characteristics of such peroxygen bleaches was much less desirable than those of the halogen bleaching agents. Therefore, liquid aqueous activated peroxygen bleach containing compositions had been developed. However, also these bleaches did not perform as well as



hypohalite bleaches in stain removal (see paragraph 3 of the patent in suit).

The technical problem underlying the invention thus is formulated in the patent in suit as the provision of a bleaching composition which not only delivers effective bleaching performance, when used in laundry applications and/or in any household application (e.g. bleaching/disinfecting of hard-surfaces), but is also safe to the surfaces treated, e.g. to fabrics per se and/or colours of fabrics, and which are chemically and physically stable upon prolonged periods of storage (see paragraph 4).

- 1.1.2 Both parties as well as the Opposition Division chose document (1) as the closest prior art since it relates to a similar technical problem as the patent in suit, i.e. to the provision of an aqueous liquid bleach composition which is chemically and physically stable throughout a wide range of temperatures and which is highly effective for use in disinfecting and bleaching substrates such as fabrics and hard surfaces (see page 3, lines 42 to 48).

The Board has no reason to depart from this finding and takes also document (1) as the most suitable starting point for the evaluation of inventive step.

- 1.1.3 As explained above document (1) already solved the technical problem of providing an aqueous liquid bleach composition which is chemically and physically stable and which is highly effective for use in disinfecting and bleaching substrates such as fabrics and hard surfaces; in fact this document teaches that the

compositions disclosed therein are extremely stable both physically and chemically and show very effective bleaching and disinfecting properties (see page 4, lines 40 to 41).

Moreover, document (1) relates explicitly to an aqueous liquid bleaching composition having a pH of from 1 to 6.5 which comprises PAP, 2 to 50% by weight of surfactant and 1.5 to 30% by weight of an electrolyte (see claims 1 and 2) wherein, at variance with claim 1 according to the main request, the amount of surfactant may be greater than 4% by weight and the solubility of PAP in the aqueous composition is not indicated.

The experimental report of 11 August 2004 invoked by the Respondent does not contain any indication of the full compositions tested and of the pH of the tested compositions. Therefore, it is not possible to establish if the submitted evidence is a reasonable comparison with respect to a composition in accordance with the teaching of document (1) which requires a pH not greater than 6.5 and the presence of an electrolyte.

Already on this ground such an experimental report cannot be considered to be a convincing evidence of an alleged improved technical effect over the teaching of document (1).

Therefore, the Board concludes that this experimental report is not apt to show any convincing improvement as to the chemical stability of the composition tested over a composition of document (1).

As regards the safety on fabrics of the compositions the Respondent agreed during oral proceedings that the claimed compositions are not better than those disclosed in document (1).

Therefore, the Board finds that, in the light of the teaching of document (1), the technical problem underlying the invention can only be formulated as the provision of an alternative liquid aqueous bleaching composition having similar chemical and physical stability and good bleaching performance.

The Board has no reason to doubt that the subject-matter of claim 1 solved the above mentioned technical problem.

- 1.1.4 The Board remarks that the use of electrolytes is encompassed by claim 1 of the patent in suit and, in fact, electrolytes such as phosphates are explicitly indicated as optional components in paragraph 89 of the patent in suit. Therefore, the fact that a composition in accordance with the teaching of document (1) contains necessarily an electrolyte is of no relevance for the discussion of inventive step.

The Board remarks that document (1) teaches that the compositions according to that invention are extremely stable both physically and chemically and show very effective bleaching and disinfecting properties (see page 4, lines 40 to 41) and that PAP is the particularly preferred peroxyacid to be used (see page 5, line 20). The Board thus cannot agree with the Respondent's allegation that document (1) would deal

mainly with the physical stability of this kind of compositions.

Moreover, claim 2 of this document relates explicitly to an aqueous liquid bleaching composition having a pH of from 1 to 6.5 which comprises PAP, 2 to 50% by weight of surfactant and 1.5 to 30% by weight of an electrolyte (see claims 1 and 2).

Therefore, even though the description of document (1) indicates a preference for a concentration of surfactant between 5 to 35% by weight, depending on the purpose of use (page 6, line 6), and the examples of this document relate to compositions containing at least 6% by weight of surfactants, in the light of the whole teaching of this document, it would have been obvious for the skilled person, faced with the technical problem of providing an alternative liquid aqueous bleaching composition having similar chemical and physical stability and good bleaching performance, to try also a composition throughout the whole range of surfactants indicated explicitly in claim 1, i.e. also a composition having 2% by weight of surfactants, with the expectation of obtaining a similarly chemically and physically stable composition having good bleaching performance.

As regards the only technical feature of claim 1 according to the main request not explicitly disclosed or suggested in document (1), i.e. the solubility in the aqueous composition of the pre-formed PAP, usually commercially available as solid particles, it was undisputed that there existed commercially available

PAPs having such a solubility at the priority date of the patent in suit.

Moreover, as admitted by the Respondent, the solubility recited in claim 1 indicated only the capability of PAP of being stably suspended in the composition but did not contribute to the chemical stability of the composition. However, also the compositions disclosed in document (1) are stable suspensions since they are extremely physically stable.

Therefore, the skilled person, by following the teaching of this document, would have also selected among all the commercially available PAPs those having the capability of being stably suspended in an aqueous composition, which selection would have included necessarily products having a solubility as required in claim 1.

The Board thus concludes that the subject-matter of claim 1 lacks an inventive step.

2. *Respondent's first auxiliary request*

2.1 Inventive step

Claim 1 according to the first auxiliary request differs from claim 1 according to the main request only insofar as the concentration of surfactant in claim 1 is limited to "from 0.2% to 3% by weight".

Since document (1) already taught to use also a concentration of surfactant of 2% by weight, i.e. within the range of 0.2 to 3% by weight as required in

claim 1, the subject-matter of this claim 1 lacks an inventive step for the same reasons given above.

Therefore, the Board finds that the subject-matter of claim 1 in accordance with the first auxiliary request lacks an inventive step.

## **Order**

### **For these reasons it is decided that:**

The decision under appeal is set aside.

The patent is revoked.

The Registrar:

The Chairman:

G. Rauh

P.-P. Bracke