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**Datasheet for the decision
of 21 October 2011**

Case Number: T 0692/09 - 3.3.06

Application Number: 00959694.1

Publication Number: 1212398

IPC: C11D 3/39, C11D 3/10,
C11D 3/02, C11D 3/20

Language of the proceedings: EN

Title of invention:
Bleaching detergent compositions

Applicant:
THE PROCTER & GAMBLE COMPANY

Opponent:
Unilever PLC et al

Headword:
Bleaching and disinfecting composition/PROCTER

Relevant legal provisions:
EPC Art. 56
RPBA Art. 12(4)

Keyword:
"Inventive step: yes"
"Admissibility of new filed documents: yes"

Decisions cited:
T 1392/04

Catchword:
-



Case Number: T 0692/09 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 21 October 2011

Appellants:
(Opponents) Unilever PLC
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and

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Respondent:
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Representative: Samuels, Lucy Alice
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 22 January 2009
rejecting the opposition filed against European
patent No. 1212398 pursuant to Article 101(2)
EPC.

Composition of the Board:

Chairman: L. Li Voti
Members: P. Ammendola
J. Geschwind

Summary of Facts and Submissions

I. This appeal is from the decision of the Opposition Division to reject the opposition against European patent No. 1 212 398 relating to bleaching detergent compositions.

II. The patent as granted comprises six claims, whereby claim 1 reads:

"1. A laundry detergent composition comprising a bleach system which contains a hydrogen peroxide source and at least 2.5% by weight of a peroxyacid bleach precursor, at least 15% by weight of a carbonate source, which may include the hydrogen peroxide source, at least 7% by weight of an acid, preferably an organic acid, whereby a 1% by weight mixture of the composition in demineralised water provides a pH from 8.8 to 9.9, and which further comprises an anionic surfactant."

Claims 2 to 5 as granted define preferred embodiments of the laundry composition of claim 1.

Claim 6 as granted reads:

"5. Washing method for washing textile in a washing machine whereby a composition according to any of claims 1 to 5 is introduced in a dispensing device which is then introduced in the drum of the machine prior to the introduction of wash water."

III. The Opponents sought revocation of the patent-in-suit on the grounds of, *inter alia*, lack of inventive step (Article 100(a) in combination with Articles 52(1) and (2) and 56 EPC).

During the opposition proceedings the parties referred to, *inter alia*, the documents:

- (1) = EP-A-0 651 053,
- (3) = EP-A-0 832 968,
- (9) = *Chemistry & Industry*, 15 October 1990,
pages 641-645,
- (10) = Clariant brochure entitled "*The Clean and Clever Way of Bleaching*", August 1999,
- (11) = *Surfactant Science Series*, Vol. 1 , no. 2,
pages 165 to 203 (April 1998),
- (12) = *J. Appl. Bacteriol.*, 1983, 54, 417-423
(erroneously indicated in the decision under appeal as "*J. Appl. Bacteriol.*, 1984, 57, 499-503 (1983)"),

and

- (14) = "*Disinfection, Sterilization, and Preservation*" (4th edition) published 1991, Ed. Seymour S. Block, Chapter 9, pages 167 to 181
(erroneously indicated in the decision under appeal as (3rd edition) published January 1983, pages 161 to 181).

IV. The Opposition Division in its decision indicated that document (10) was not considered as a prior art document, due to the insufficient evidence as to its unrestricted availability to the public.

Document (1) was found to disclose the closest prior art. The Opposition Division noted in particular that this citation provided no information as to the (final) pH of the washing liquors obtained from the laundry detergent compositions generating *in situ* peroxyacid bleach (hereinafter GP laundry compositions) specifically exemplified therein. Hence, the GP laundry compositions according to the claims of the patent-in-suit differed from those exemplified in document (1) only because the former produced a 1% by weight mixture in demineralised water with a pH of 8.8 to 9.9.

The technical problem solved by the subject-matter of the opposed claims vis-à-vis the prior art was found to be the provision of further GP laundry compositions which produced efficient sanitisation together with excellent cleaning.

Since none of the documents which referred to anti-microbial efficacy of peroxyacid bleaches was also directed to multicomponents laundry compositions, and since all such citations, inclusive of documents (12) and (14), confirmed that the maximum antimicrobial activity of peroxyacid bleaches was achieved at a pH value much lower than 8.8, the Opposition Division concluded that the available prior art would not suggest to the skilled person, who was aiming at efficient cleaning and sanitisation at the same time,

that these combined effects were possible in GP laundry compositions which produced a 1% by weight washing liquor with a pH in the range 8.8-9.9. Hence, the available prior art did not render obvious the subject-matter of the claims of the opposed patent.

V. The Opponents (hereinafter Appellants) appealed this decision. They filed with the statement setting out the grounds of appeal the documents:

(18) = "*The Biocidal Efficacy of TAED In Fabric Washing Formulas*" Croud, V.B. et al., HAPPI, January 1997, pages 82-92,

(19) = US 4,545,784

and

(20) = US 5,914,303.

The Patent proprietor (hereinafter Respondent) replied to the statements setting out the grounds of appeal with a letter dated 7 October 2009 enclosed with two sets of amended claims respectively labelled as First and Second Auxiliary Request.

At the oral proceedings held on 21 October 2011 in the presence of both parties, the Respondent conceded that document (18) was an evidence of the common general knowledge and disputed the admissibility of documents (19) and (20) only.

VI. The Appellants disputed in writing and orally only the findings in the decision under appeal as to the presence of inventive step.

As to the admissibility of the documents (18) to (20), they stressed already in the accompanying statement setting out the grounds of appeal that:

- document (18) had been filed as evidence of highly relevant common general knowledge in the field

and

- documents (19) and (20) had been submitted as evidence of prior art highly relevant in view of the obviousness of the pH range of claim 1 as granted.

At the oral proceedings before the Board the Appellants also maintained that the filing of these documents was a reaction to the decision of the Opposition Division not to consider document (10) as a prior art document.

In respect of the inventive step assessment for the subject-matter of the claims of the patent-in-suit as granted, they argued that it would be possible to start either from the GP laundry composition of example 1A of document (1) or from that of example 1 of document (3), as both exemplified compositions explicitly complied with all the requirements of claim 1 of the patent-in-suit except for the fact that these citations did not disclose which pH was obtained when preparing a 1% by weight washing liquor from the exemplified compositions. Hereinafter these examples of prior art are also cumulatively indicated as **the two examples of departure.**

The Appellants' first line of reasoning was that the Opposition Division had erred in considering credible the generic statements in paragraphs [0008] and [0009] of the patent-in-suit that the patented compositions produced efficient sanitisation simultaneously with excellent bleaching. Indeed, these statements were supported neither by experimental evidence already present in the patent as granted nor by subsequently provided experimental comparison with any of the two examples of departure. In the opinion of the Appellants, it would be consistent with the jurisprudence of the Boards of Appeal - as expressed e.g. at point 20 of the decision T 1392/04 (not published in OJ EPO) - to disregard allegations as to the advantages of the invention not supported by experimental evidence. Thus, the sole technical problem credibly solved by the patented subject-matter vis-à-vis the prior art exemplified in document (1) or in document (3) was that of providing further GP laundry compositions with good bleaching.

Since it was well-known, e.g. from document (9) or (11), that the optimal bleaching activity of GP laundry compositions was observed at a pH of the washing liquor of about 9 to 10, the patented subject-matter would at most represent an obvious optimization of the examples of departure.

In a second line of reasoning, the Appellants argued that the subject-matter of the granted claims remained obvious for the skilled person starting from any of the two examples of departure even in case the Board would consider credible that the patented compositions

provided effective sanitisation. Indeed, not only document (3) itself explicitly mentioned the disinfecting properties of peroxy bleaches, but it was common general knowledge described in document (18) that GP laundry composition provided sanitisation in alkaline washing liquors as well. Hence, the person skilled in the art would have expected sanitisation to be provided also by a GP laundry composition that produced an alkaline washing liquor. In addition, the pH ranges and values explicitly disclosed in documents (19) and (20) as optimal for ensuring sanitising effects to peroxyacid-containing laundry compositions would have specifically suggested to the skilled person that these effects were to be expected in particular from the GP laundry compositions that produced wash baths with a pH of 8.8 to 9.9.

Thus, the patented compositions were not based on an inventive step.

VII. The Respondent disputed the admissibility of documents (19) and (20), because these citations were belated and not more relevant than the already available prior art.

As to the inventive step assessment for the subject-matter of the patent claims as granted, the Respondent stressed that the Appellants had provided no argument or evidence depriving of credibility the statements in the patent-in-suit as to the fact that the GP laundry compositions also provided efficient sanitisation. Hence, the assessment of inventive step should be made by taking into account the technical problem indicated in the patent-in-suit.

The Respondent considered that the subject-matter of claim 1 as granted provided a solution to the indicated problem that was not obvious when starting from any of the two examples of departure.

As a matter of fact, document (1) described neither the pH observed in the washing liquors produced by the GP laundry compositions specifically exemplified therein, nor any other explicit or implicit teaching necessarily implying that these compositions also achieved efficient sanitisation.

The same applied to document (3), which only additionally mentioned the disinfecting property possibly displayed by the optional peroxy bleach ingredients in general.

Moreover:

- in the common general knowledge, as also reflected in documents (12), (14) and (18), an effective sanitisation was only associated to the acid form of the of peroxyacid, i.e. to the form only prevailing at pHs of the washing liquors of 8 and less;

- additionally document (18) explicitly confirmed the general expectation that the anionic form of the peroxyacid prevailing in very alkaline wash baths was insufficient as disinfectant, and proposed to remedy to such insufficiency by adding certain ingredients and excluding, in particular, alkaline surfactants, and not by reducing the pH at a value between 8.8 to 9.9;

- document (19) only disclosed compositions not containing carbonate sources and, moreover, provided no clear indication as to the possible existence of a moderately alkaline pH at which GP laundry compositions produced sanitisation simultaneously with excellent cleaning

and

- document (20) did not refer to compositions containing carbonate sources in which the peroxyacid was generated *in situ*, but rather only to disinfecting compositions wherein the peroxyacid was already present as starting ingredient.

Hence, the skilled person aiming at efficient sanitisation together with excellent cleaning, would find neither in the common general knowledge nor in the available documents any reasons for expecting that these combined effects were produced by the GP laundry compositions containing a carbonate source described in claim 1 of the patent-in-suit.

Thus, the patented compositions were not obvious.

VIII. The Appellants requested that the decision under appeal be set aside and that the European patent be revoked.

The Respondent requested that the appeal be dismissed or alternatively that the patent be maintained in amended form on the basis of the set of claims of the First or Second Auxiliary Request filed with letter of 7 October 2009.

Reasons for the Decision

Admissibility of documents (18) to (20)

1. The Appellants have filed documents (18) to (20) with the statement setting out the grounds of appeal.

The Board finds that document (18) is an evidence of common general knowledge and notes that the Respondent has not contested its admissibility.

The Respondent has disputed however the admissibility of documents (19) and (20) for being late-filed and lacking relevance.

The Board notes that:

- the Appellants have filed these citations at the very beginning of the appeal proceedings, indicating already into the accompanying statement of the grounds of appeal that they considered the disclosure provided in these documents relevant for the assessment of inventive step, as far as the obviousness of the pH range of the water solution was concerned,

- the Appellants have also alleged that the filing of these new evidences was a reaction to the decision under appeal not to consider document (10) as a prior art document,

and

- documents (19) and (20) manifestly disclose specific pH values for **washing or disinfecting** solutions containing peroxyacid that fall within the presently claimed range of from **8.8 to 9.9**.

The Board, thus, finds that the filing of documents (19) and (20) is justified under the circumstances of the case and that these documents are *prima facie* relevant.

Hence, exercising its discretion referred to in Article 12(4) RPBA, the Board has decided to admit documents (18) to (20) into the appeal proceedings.

Patent as granted (Respondent's main request)

2. Inventive step for the subject-matter of claim 1 as granted (Article 100(a) in combination with Articles 52(1) and (2), and 56 EPC).
 - 2.1 Claim 1 of the patent-in-suit (see above section II of the Facts and Submissions) defines a GP laundry detergent composition containing a hydrogen peroxide source, a peroxyacid bleach precursor (at least 2.5% by weight), a carbonate source (at least 15% by weight) which may simultaneously be the hydrogen peroxide source, an acid (at least 7% by weight) and an anionic surfactant, whereby a 1% by weight mixture of the composition in demineralised water provides a pH of from 8.8 to 9.9.
 - 2.2 In order to correctly identify the prior art of departure for the assessment of inventive step it is necessary to consider the statements contained in the

patent-in-suit as to the technical problem addressed by the invention.

- 2.2.1 The Board notes that paragraphs [0002] to [0008] of the patent-in-suit describe the background of the invention by referring to difficulties in formulating GP laundry compositions (i.e. composition in which a peroxyacid bleach is generated *in situ* from a precursor thereof and from a source of hydrogen peroxide) capable of providing efficient sanitisation simultaneously with excellent cleaning. These difficulties are attributed to the fact that while an highly alkaline pH is necessary for generating the peroxyacid bleach and favoured by certain conventional ingredients of GP laundry compositions (such as percarbonate or certain builders), the same highly alkaline pH is also known to promote dissociation of the acid form of the peroxyacid required for sanitisation. Consistently, the technical problem underlying the invention is then identified in paragraph [0009] of the patent-in-suit as that of providing "*efficient antimicrobial performance and/or sanitisation whilst a good cleaning of both bleachable and non-bleachable stains is achieved*".

The patent-in-suit provides examples of the patented compositions. Some quantitative information on the level of biocidal activity aimed at is provided in paragraphs [0016] to [0019] of the patent-in-suit that describe a standard method for measuring the activity of microorganisms and a list of the relevant microorganisms, identify the minimum concentration at which the laundry composition should be used relative to the initial concentration of microorganisms and

define some specified minima for the reduction in microorganism activity to be observed.

2.2.2 The Board considers appropriate to stress that this description of the addressed problem of the background art given in the patent-in-suit appears consistent with the common general knowledge as derivable from the available non-patent literature of documents (12), (14) and (18). These citations confirm indeed that the skilled person would know that in the case of GP laundry compositions the acid form of the peroxyacid prevailing at lower pH is in general much more effective in providing sanitisation than its anionic form prevailing under alkaline conditions (see e.g. document (12) page 419, left column below Table 1, first full sentence, and the Tables in the subsequent pages; document (14) page 173, right column, lines 8 to 11, and the tables referred therein; document (18), page 84, right column, lines 16 to 23). Moreover, document (18) explicitly recognises that there is a necessity of "*potentiating*" the sanitising activity of the peroxyacid anion in the alkaline wash baths (see in document (18), page 84, right column, lines 24 to 31), thereby implicitly confirming the existence of difficulties in achieving good sanitisation under the alkaline conditions required for peroxyacid generation and good bleaching.

2.2.3 Hence, the skilled reader of the whole patent disclosure is correctly reminded of the existing common general knowledge as to the fact that the GP laundry compositions of the prior art containing a carbonate source that produce highly alkaline wash baths and result in good bleaching normally do not provide

satisfactory sanitisation. Accordingly, the skilled person can only reasonably interpret the aimed "*efficient antimicrobial performance and/or sanitisation*" indicated in paragraph [0009] of the patent-in-suit as a level of sanitisation **superior** to that expected for the GP laundry compositions containing a carbonate source that produce highly alkaline wash baths. Hereinafter the aimed combination of good levels of sanitisation and bleaching is also indicated as **efficient sanitisation with good bleaching**.

2.3 The Appellants have considered reasonable to assess inventive step starting from any of the two examples of departure (see above section VI of the Facts and Submissions).

In view of the technical problem indicated in the patent-in-suit and discussed above, and considering that:

- both these prior art examples are GP laundry compositions containing a carbonate source and providing good cleaning (see also in document (1) page 13, line 36, and in document (3) page 14, lines 32 to 33)

and

- that the subject-matter of claim 1 of the patent-in-suit only differs from example 1A of document (1) as well as from example 1 of document (3) in that claim 1 requires a 1% by weight mixture of the patented laundry composition in demineralised water to have a pH of from 8.8 to 9.9,

the Board concurs with the Appellants that it was reasonable for a skilled person to start from one or the other of these prior art examples.

- 2.4 In a first line of reasoning in view of Article 56 EPC, the Appellants have combined each of the two examples of departure with the document (9) or with document (11).

In particular, they have considered that, in the absence of any experimental data demonstrating the superior sanitising effect of the patented composition in comparison to those observable in one or the other of the two examples of departure, the statement as to the efficient sanitisation in paragraphs [0008] and [0009] of the patent-in-suit would just be an allegation of an improvement that, as indicated e.g. in the decision of the Boards of Appeal T 1392/04 (point 20 of the reasons; not published in OJ EPO), required experimental evidence in order to be considered for the assessment of inventive step.

Since it would not be credible that the patented GP laundry compositions provided a level of sanitisation superior to that of the prior art of departure, the subject-matter of claim 1 of the patent-in-suit represented just an optimization of the prior art, optimization that was rendered obvious by the combination of one or the other of the two examples of departure with document (9) or (11).

- 2.4.1 The Board notes however that the referred passage in T 1392/04 only relates to the credibility of a

statement of the Patent Proprietor that the patented subject-matter would provide an improvement of "*some particular property of the closest prior art*" (emphasis added by this Board), i.e. an improvement of one of the properties **already disclosed in the prior art** (such as those indicated at point 13 of the Reasons in this decision).

- 2.4.2 The content of the cited point 20 of T 1392/04 is, thus, not similar to the issue raised by the present case wherein, as argued by the Respondent (Patent Proprietor), the skilled reader of the relevant prior art document would not know **if** the examples of departure also provide an efficient sanitisation or not.

Indeed, the absence of specific information in documents (1) or (3) as to the (final) pH of the wash baths produced when using one or the other of the two examples of departure, and the fact that it is not even possible to presume that these examples produce a 1% by weight wash bath with a pH in the range of 8.8 to 9.9 (and, thus, necessarily obtain the aimed combination of efficient sanitisation with good bleaching) has not been disputed by the Appellant.

It is also undisputed that, whereas document (1) does not mention at all disinfection or any other expression related to sanitisation, document (3) only contains a single reference at page 8, lines 41-42, as to the fact that the optional ingredient "*oxygen bleach*" of the laundry compositions disclosed therein can "*provide a multitude of benefits such as bleaching of stains, deodorization as well as disinfectancy*".

The Board concurs with the Respondent that this passage is only a vague general statement, insufficient at justifying any reasonable prediction of the skilled reader of document (3) as to whether the specific composition of e.g. example 1, based on the specific peroxyacid bleach produced by the presence therein of percarbonate, would also provide some sanitisation, and even less the aimed effective sanitisation.

Accordingly, and in the absence of any evidence to the contrary, the Board has no reason for rejecting the argument of the Respondent that no combination of efficient sanitisation with good cleaning is disclosed to be present or to be predictable in any of the two examples of departure.

2.4.3 Thus, the Board finds that no comparative experimental evidence is required for concluding that the subject-matter of claim 1 of the patent-in-suit solves vis-à-vis each of the two examples of departure the same technical problem mentioned in the patent-in-suit, i.e. that of providing GP laundry compositions capable of **producing in combination efficient sanitisation and good bleaching** (see above point 2.2.3).

2.4.4 The Board concludes therefore that the Appellants' first line of reasoning resumed above at point 2.4 is not convincing already because it fails to correctly identify the technical problem solved.

2.5 It remains to be considered the second line of reasoning of the Appellants, in which the technical problem solved by the subject-matter of claim 1 is

correctly identified as being the same mentioned in the patent-in-suit.

In the Appellants' view, the patented GP laundry compositions would be suggested by the combination of any of the two examples of departure either with the common general knowledge reflected in document (18) or with the specific instructions contained in document (19) or (20) as to the ability of peroxyacid to produce sanitisation in wash baths with pHs in the range of 8.8 to 9.9.

The Board finds also this second line of reasoning unconvincing for the following reasons:

- 2.5.1 The Board notes that document (18), after having acknowledged the necessity of potentiating the sanitizing effect of the anion of peracetic acid (see point 2.2.2 above), only teaches to provide the needed sanitisation by using e.g. certain surfactants, with the exclusion, however, of the **anionic** ones that are explicitly indicated to "*become less effective ... under the alkaline conditions associated with fabric washing*" (see page 90, right column, lines 5 to 7 and 30 to 36).

The Board notes additionally that this citation does not mention any specific pH value, but only "*alkaline conditions*", "*alkaline wash bath*" and similar not further specified expressions (see in document (18) e.g. page 84, right column, lines 16 to 32, page 90, central column, lines 14 to 16).

Hence, the skilled person starting from any of the two examples of departure and considering document (18)

would be lead away from the subject-matter of claim 1 of the patent-in-suit, because this citation renders only obvious to solve the posed technical problem by replacing the anionic surfactants already present in the examples of departure with other ones, without imposing any restriction as to the pH value that should be observable in the resulting washing liquor.

Thus, the combination of any of the two examples of departure with this citation cannot render obvious to solve the posed technical problem by means of the GP laundry compositions described in claim 1 of the patent-in-suit, which requires instead an alkaline surfactant ingredient and a chemical composition apt at producing a wash bath with a mildly alkaline pH of 8.8-9.9.

2.5.2 As to document (19), the Board notes that this citation does not relate to carbonate-comprising laundry compositions (see document (19) claim 1 and all the examples). Already for this reason the skilled person aiming at improving the sanitisation provided by any of the two examples of departure, both containing a carbonate source, would not consider immediately applicable thereto the teachings as to the pHs of the sanitising baths obtainable from the compositions of document (19).

The Board notes additionally, that this citation only refers to the possibility of improving the washing **or** disinfection capability of perborate-based GP laundry compositions forming solutions with a pH from 7.5 to 9.0 (see e.g. claims 27 and 29 and the abstract). This, however, does not equate to the disclosure that in this

pH range it is possible to obtain **simultaneously** efficient sanitisation **and** good bleaching.

Accordingly, the Board finds that the person skilled in the art would not find in document (19) any clear instruction directly applicable to the specific carbonate-containing GP laundry compositions of the examples of departure, for the solution of the problem posed.

2.5.3 Since also document (20) only discloses compositions in which no carbonate source is present, any teaching contained therein as to the pH of the wash baths resulting from these compositions is also not directly applicable for solving the posed problem in any of the two examples of departure.

Moreover, this citation does not even relate to GP laundry compositions at all, but rather to bleaching, washing and disinfecting compositions in which the peroxyacid bleach is already present as such in the initial formulation (see document (20) e.g. claim 8, the examples and the abstract).

Thus, the relationships between chemical formulation of the composition and the pH of the resulting wash baths for the prior art disclosed in this citation are even more different from those existing for the two examples of departure.

Accordingly, the Board finds that the person skilled in the art would also not find in document (20) any clear instruction directly applicable to the specific carbonate-containing GP laundry compositions of the

examples of departure for the solution of the problem posed.

- 2.6 Therefore, the Board finds unconvincing all Appellants' objections to the non-obviousness of the method of claim 1 as granted.

Hence, the subject-matter of this claim is found to be based on an inventive step and, thus, to comply with the requirements of Article 56 EPC.

3. Inventive step for the subject-matter of claim 2 to 6 as granted (Article 100(a) in combination with Articles 52(1) and (2), and 56 EPC).

The reasoning given above in respect of the non-obviousness of the GP composition of claim 1 applies also to the preferred embodiments of this latter as defined in granted claims 2 to 5, as well as to the washing method defined in claim 6 as granted, based on the use of these GP compositions.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

L. Li Voti