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**Datasheet for the decision
of 9 November 2016**

Case Number: T 0942/14 - 3.3.06

Application Number: 07111540.6

Publication Number: 2014756

IPC: C11D3/39, C11D17/04

Language of the proceedings: EN

Title of invention:

Laundry multi-compartment pouch composition

Patent Proprietor:

The Procter & Gamble Company

Opponents:

Henkel AG & Co. KGaA
Reckitt Benckiser (UK) Limited

Headword:

Multi-compartment pouch / PROCTER & GAMBLE

Relevant legal provisions:

EPC Art. 52(1), 56

Keyword:

Inventive step (yes) - non-obvious alternative

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

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Case Number: T 0942/14 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 9 November 2016

Appellant: Henkel AG & Co. KGaA
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 19 February
2014 rejecting the opposition filed against**

European patent No. 2014756 pursuant to Article
101(2) EPC.

Composition of the Board:

Chairman B. Czech
Members: L. Li Voti
 C. Heath

Summary of Facts and Submissions

- I. The present appeal is from the decision of the Opposition Division rejecting the oppositions against European patent no. 2 014 756.
- II. The patent in suit was granted with a set of 12 claims, independent claim 1 of which reading as follows:

"1. A laundry multi-compartment pouch made from a water-soluble film and having at least two compartments, said multi-compartment pouch comprises a composition comprising a solid component and a liquid component, wherein;

(a) a first compartment comprises a liquid component, said liquid compartment containing a bleach activator,

(b) a second compartment comprises a solid component, said solid compartment containing from 65 to 85% of a peroxide source."

Dependent claims 2 to 10 concern specific embodiments of the multi-compartment pouch.

Whilst claim 11 concerns a method of treating fabric by using a pouch as claimed, claim 12 concerns a specific use of a pouch as claimed.

- III. The two opponents had requested revocation of the patent in its entirety on the ground of lack of inventive step (Article 100(a)).

The following documents (*inter alia*) were cited during opposition proceedings:

D1: WO 2005/058700 A1;

D6: WO 2006/120405 A1;
D7: WO 01/60966 A1; and
TR: Technical Report filed for the first time by the Applicant on 21 January 2010 (during substantive examination).

IV. In the decision under appeal, the Opposition Division decided that the claims as granted involved an inventive step.

V. In its statement of grounds of appeal, the Appellant (Opponent 01) maintained that the claimed subject-matter lacked an inventive step in the light of the combination of documents D7 and D1. With the statement, it also filed two further items of evidence, namely

D8: ORGANIC CHEMISTRY - Reactions, Mechanisms, and Structure, fourth edition, 1992, by J. March; pages 1202 and 1203; and

D9: EUROPÄISCHE KOMMISSION, 4.11.2010, 2010/0298(COD), Vorschlag für eine VERORDNUNG(EU)NR.../... DES EUROPÄISCHEN PARLAMENTS UND DES RATES zur Änderung der Verordnung(EG)Nr. 648/2004 in Bezug auf die Verwendung von Phosphaten und anderen Phosphorverbindungen in Haushaltswaschmitteln; pages 1 to 14.

VI. In its reply, the Respondent (Patent Proprietor) rebutted the Appellant's objections. Nevertheless, it also filed a set of amended claims as first auxiliary request.

VII. The party as of right (Opponent 02) did not submit any comments in writing. It merely announced by letter of

1 September 2016 that it would not attend the oral proceedings to which the parties had been summoned by the Board.

- VIII. With a further letter dated 09 September 2016 the Appellant maintained and extended its objections and arguments as regards inventive step also with respect to the claims according to Respondent's first auxiliary request.
- IX. Oral proceedings were held on 9 November 2016. The only issue raised and debated was inventive step in the light of D7, more particularly the question of whether or not the subject-matter of claim 1 at issue was an obvious alternative to the pouches disclosed in examples 12 and 13 of D7. D1 and D6 were also considered in this connection, whilst D8 and D9 were not specifically addressed.
- X. The Appellant requested that the decision under appeal be set aside and the patent be revoked.

The Respondent requested that the appeal be dismissed or, alternatively, that the decision under appeal be set aside and that the patent be maintained on the basis of the claims according to the auxiliary request filed with letter of 13 November 2014.

- XI. The Appellant's arguments of relevance here, submitted in writing and orally, can be summarised as follows:

- The technical problem underlying the claimed invention, seen in the light of the closest prior art represented by example 12 or 13 of document D7, merely consisted in the provision of an alternative multi-compartment pouch containing a laundry bleach

composition including a peracid source, comprising a solid component and a liquid component, and having similar properties as regards suppression of patchy discoloration of the treated fabric and stability of incompatible ingredients.

- For the skilled person it would have been obvious to try, as an alternative, a pouch comprising a greater amount of percarbonate in the solid component compartment, for example in order to increase the bleaching performance of the product.

- Therefore, it would have been obvious to increase the amount of percarbonate in the solid component compartment of the pouches of example 12 or 13 of D7 to an amount in the range of from 65 to 85% by weight, as required by claim 1 at issue.

- The disclosure of document D1 confirmed that it was obvious for the skilled person to use high amounts of a peroxygen source in the solid component compartment of a multi-compartment product suitable for laundry washing and containing incompatible ingredients to be kept separated from each other. In fact, examples 1 to 4 of D1, like the examples of D7, disclosed multi-compartment products suitable for laundry washing (as apparent from D9). These products had one compartment containing a solid component comprising percarbonate and another compartment containing a liquid component comprising the bleach activator TAED (tetraacetyl ethylene diamine). Moreover example 5 of D1 disclosed a further multi-compartment product containing, within one compartment, a solid component consisting of 100% PAP (phthaloyl amido peroxy hexanoic acid) granules, the peroxy acid PAP being a peroxide source like percarbonate, as apparent from D8.

- The claimed subject-matter thus lacked an inventive step.

The Respondent's counter-arguments of relevance here can be summarised as follows.

Even accepting as appropriate, for the sake of argument only, the technical problem suggested by the Appellant, and that the person skilled in the art would consider combining the teachings of documents D7 and D1, the claimed subject-matter still involved an inventive step for the following reasons:

- Document D7 did not contain any explicit teaching to use a greater percarbonate content in the solid component than that described in the examples, which was far less than 65% by weight.

- Document D1 did not disclose a solid component containing more than 22% by weight of percarbonate.

- Therefore, the skilled person in the prior art would not have found any motivation for greatly increasing the amount of percarbonate in the pouches exemplified in D7, which already provided excellent results as regards suppression of patchy discoloration of fabric and stability of incompatible ingredients.

- Quite to the contrary, knowing that the presence of the activated bleach system leading to formation of peracids was responsible for the possible patchy discoloration of fabrics, the skilled person would have been deterred from trying to increase the total amount of bleaching components to a much higher level than that used in the examples of D7.

- Furthermore, the skilled person would not have found in the disclosure of D1 any suggestion to modify the amount of percarbonate in the solid component of examples 12 or 13 of D7.

- In fact, examples 1 to 4 of D1 did not suggest to use amounts of percarbonate higher than that used according to D7. Example 5 of D1 concerned a multi-compartment product not containing percarbonate but containing, as a solid component, PAP, which is an organic peroxyacid bleach, i.e. a bleaching component chemically and structurally completely different from percarbonate and which, according to the teaching of D7, could be incorporated exclusively into the liquid component (and hence not at all in the solid one).

- Furthermore, the PAP granules used according to D1 did not contain 100% PAP but at most 60% thereof as apparent from D6.

- Therefore, it would not have been obvious for the skilled person, in the light of the teaching of the prior art, to try to provide a multi-compartment pouch having all the features required by claim 1 at issue.

Reasons for the Decision

Respondent's Main request - Inventive step - Claim 1 as granted

1. The invention

- 1.1 The invention concerns a laundry multi-compartment pouch made from a water-soluble film, wherein one compartment contains a liquid component comprising a

bleach activator and the other compartment contains a solid component comprising a peroxide source (see paragraph [0001] of the patent in suit and claim 1).

- 1.2 In the description of the patent in suit (paragraph [0002]) it is indicated that "*... in a laundry washing method ... [t]raditionally, the removal of ...bleachable stains has been facilitated by the use of bleach components such as oxygen bleaches, including hydrogen peroxide and organic peroxyacids ... One problem that has become more significant ... is that of 'patchy' localised discoloration to fabric colours and materials caused by the development of localised high concentrations of bleaching species ... Where a peroxyacid bleach precursor forms a component of the composition the potential problem is increased. In addition to the potential for localised high concentrations of perhydroxyl ion arising from dissolution of the inorganic perhydrate contained in laundry detergent compositions, the perhydrolysis of the peroxyacid bleach precursor can give rise to significant localised peroxyacid bleach concentrations.*"

The description goes on with the indication (paragraph [0003]) that "*there is still a need to provide detergent compositions in which the organic peroxyacid bleach precursor is incorporated in a form that minimises and preferably eliminates patchy discoloration of fabric colours during its dissolution, whilst still providing acceptable bleachable soil/stain removal from soiled/stained fabrics and which is, in the same time, more attractive and convenient to the consumers.*"

2. Closest prior art

2.1 It is not in dispute that document D7 represents the most suitable starting point for the evaluation of inventive step. Considering the similarities of the technical issues addressed and the products described, the Board has no reason to take another stance.

2.2 Indeed, D7 concerns explicitly (page 1, lines 5 and 6, and lines 27 to 29; page 2, line 16 to page 3, line 6) multi-compartment pouches, a form of detergent product considered attractive by the consumers. The multi-compartment pouches of D7, especially for use in the process of washing fabrics, contain a bleach composition comprising a source of peracid, which shows a reduced risk of patchy damage to the fabrics, an increased stability of incompatible ingredients during storage and, hence, maintenance of the performance of the composition.

2.3 More particularly, the pouches disclosed in examples 12 or 13 of D7 have the least technical differences as compared to the subject-matter of claim 1 at issue.

2.4 Therefore, for the Board, a pouch according to example 12 or 13 represents the closest prior art for the purpose of assessing inventive step.

3. Technical problem

3.1 According to the Appellant, the multi-compartment pouches disclosed in document D7 already solve all the technical problems addressed to in the patent in suit. Hence, it argued that, in the light of the closest prior art identified under 2.4, *supra*, the technical problem consisted merely in providing an alternative

laundry multi-compartment pouch containing a bleach composition including a peracid source, comprising a solid component and a liquid component, and having similar properties as regards suppression of patchy discoloration of the treated fabric and stability of incompatible ingredients.

3.2 In the following assessment of inventive step, the Board accepts, for the sake of argument only and in the Appellant's favour, this minimalistic formulation of the technical problem.

4. Solution

As a solution to this technical problem, the patent in suit proposes the "*laundry multi-compartment pouch*" according to claim 1, which is characterised in particular in that it comprises

- (a) a first compartment comprises a liquid component, said liquid compartment containing a bleach activator,*
- (b) a second compartment comprises a solid component, said solid compartment containing from 65 to 85% of a peroxide source."*

5. The success of the claimed solution

5.1 It is plausible and not in dispute, and the Board thus has no reason to doubt, that a product according to claim 1 solves the technical problem identified under 3.1, *supra*.

5.2 Hence, there is no need to consider the experimental results in document TR, allegedly showing the

superiority of pouches as claimed as regards the suppression of patchy damage to the fabrics.

6. Non-obviousness of the solution

6.1 The closest prior art is represented by the pouches of examples 12 or 13 of D7 (see also page 52, line 35 to page 53, line 35 of D7). These examples disclose a laundry detergent composition provided in a dual-compartment pouch made from a Monosol M8630 film, which is a water-soluble polyvinylalcohol (PVA) film (page 7, lines 21 to 24 of D7). In one compartment, the pouch of examples 12 and 13 contains (page 53, lines 31 to 32 of D7) a liquid component comprising TAED or NOBS (nonanoyl oxy benzene sulfonate), respectively, which are both "*bleach activators*" within the meaning of the patent in suit (see page 5, lines 40 to 47 of the patent in suit), and the other compartment contains a solid component comprising (from 0) **up to 15% by weight of the total composition of percarbonate** (page 53, lines 34 to 35), which is a "*peroxide source*" within the meaning of the patent in suit (see page 6, lines 32 to 34 of the patent in suit).

6.1.1 The multi-compartment pouches of examples 12 and 13 of D7 thus differ from the subject-matter of claim 1 at issue only insofar as the maximum amount of peroxide source (represented by percarbonate) in the solid component is much lower than the 65 to 85% by weight of the solid component required by claim 1 at issue. This was not in dispute.

6.1.2 In fact, considering that the liquid component according to examples 12 and 13 (see page 53, lines 7 to 9 in combination with lines 31 to 34) amounts to at most 35% by weight of the total composition (20% of

TAED or NOBS plus 15% mineral oil), the **solid component** makes up **at least 65% by weight of the total composition**. Hence, with an amount of percarbonate in the total composition of up to 15% (page 53, line 11 in combination with lines 34 and 35), the amount of percarbonate in the solid component may be at most $(15/65) \cdot 100$, i.e. about 23% by weight of the solid component.

- 6.2 It remains to be decided whether, having regard to the state of the art and common general knowledge, it was obvious to the skilled person seeking to solve the technical problem posed (3.1, *supra*), to modify the solid component contained in the multi-compartment pouch of the closest prior art by increasing the relative amount of percarbonate or that of the overall peroxygen source in the solid compartment to a level in the range of from 65 to 85% by weight of the solid component.
 - 6.2.1 It is not in dispute that D7 does not contain any explicit teaching to use a percarbonate or a peroxygen source content greater than that used in the illustrative examples 12 and 13 (see, for example, page 27, line 29 to page 28, line 26 of D7).
 - 6.2.2 Moreover, it was known that the peroxygen source in contact with the bleach activator contributes to the formation of peracid, which, if not adequately dispersed upon use, leads to undesired patchy damage to the fabric (see e.g. D7, page 26, lines 20 to 24 and lines 30 to 32. This is acknowledged on a more general level by the patent in suit (page 2, lines 30 to 33)).
 - 6.2.3 Therefore, for the Board, the person skilled in the art, even knowing that a greater amount of percarbonate

could potentially bring about an increased bleaching efficiency with respect to several types of stains, would not have been motivated to increase substantially (from at most 23 to 65% or more, i.e. by at least about 300%) the amount of the peroxygen source (percarbonate) used in examples 12 or 13 with respect to that of bleach activator, since he would expect that doing so would potentially result in the formation of greater amounts of peracids (locally), thereby increasing the difficulty of controlling the suppression of patchy damage to fabrics.

6.2.4 The Board thus concludes that even though the skilled person could theoretically have envisaged increasing the amount of the peroxygen source in the closest prior art pouches (D7, examples 12 and 13), he would not have done it for fear of jeopardising the efficiency of the compositions of D7, in particular as regards the suppression of patchy damage.

6.3 The Appellant argued also that the skilled person would additionally have taken into consideration the disclosure of document D1. This was disputed by the Respondent.

6.3.1 The following considerations are based on the acceptance, for the sake of argument only and in the Appellant's favour, that the person skilled in the art seeking to solve the technical problem posed, could have taken into consideration also the disclosure of document D1 because of a certain similarity of the structural and compositional features of the multi-compartment article disclosed therein.

6.3.2 Document D1 concerns (page 5, lines 5 to 7) a water-soluble multi-compartment container containing a

detergent composition. Such a container may comprise (page 19, lines 18 to 23 and page 20, line 3) a laundry washing composition and, in particular, liquid and solid components contained in different compartments.

According to the Appellant, considering D9 (page 6, fourth paragraph and page 10, article 1(2)), examples 1 to 4 of D1 (see tables on pages 39 and 41 to 43) concern articles suitable for laundry washing. The articles of these examples comprise a compartment comprising a solid component in the compartment B, comprising percarbonate in an amount of 22% (examples 1 and 2) or 20% by weight (examples 3 and 4), i.e. in amounts similar to those of examples 12 and 13 of document D7. In these examples, another compartment of these containers contains a liquid composition in the form of a gel (compartment C in examples 1, 2 and 3) or a melt (compartment A in example 4) comprising the same "bleach activator" TAED as example 12 of D7. Therefore, for the Board, from these examples of D1, the person skilled in the art could not derive any suggestion or motivation to increase the amount of percarbonate in the **solid** component of the pouches according to example 12 or 13 of D7.

6.3.3 Example 5 of D1 concerns a container comprising a compartment B comprising a powder composition not containing any peroxygen source, a compartment C in gel form comprising the bleach activator TAED and a compartment A comprising a solid consisting to 100% of PAP granules, PAP being a preformed organic peroxy acid bleach (see D6, page 3, lines 11 to 12, and D7, page 21, lines 6 to 7).

6.3.4 The Board holds that even accepting, again for the sake of argument only and in the Appellant's favour, the

allegations, disputed by the Respondent, that PAP, though being an organic peracid, may also be considered to be a "peroxygen source", as shown in D8 (page 1203, 9-32), and that the solid component of compartment A in example 5 of D1 consists of 100% PAP (though the passage on page 6, lines 16 to 18, of D6 may suggest that PAP commercial products comprise much less than 100% of the peroxy acid), it would not have been obvious to the skilled person, in the light of this disclosure of D1, to modify the pouches of example 12 or 13 of D7 by increasing the amount of peroxygen source up to 65 to 85% by weight, as required in claim 1 at issue.

- 6.3.5 In fact, PAP is a preformed peracid and not an inorganic peroxide like the percarbonate used in the pouches of the closest prior art. Instead, it is chemically and structurally substantially different from a percarbonate.

Moreover, being an organic peracid, it is also one of those species ("source of peracid") which are identified in D7 as causing the problem of patchy discoloration of fabrics (see D7, page 2, lines 31 to 36). For this reason, according to the teaching of D7, the "source of peracid", which can also be PAP (see page 19, lines 7 to 9, and page 21, lines 6 to 7), is either dissolved and/or suspended in the liquid matrix of the first component of the composition (page 9, lines 19 to 24), whilst the second component, which maybe a solid (page 25, line 16) is preferably free of source of peracid (page 24, line 6) according to D7.

Also example 11 of D7, of which examples 12 and 13 are a modification, expressly describes a pouch wherein PAP is comprised in the liquid component.

6.3.6 Therefore, the Board holds that the person skilled in the art would clearly have been deterred or at least oriented away by the teaching of D7 from using PAP in the solid component. Consequently, even taking into account the teaching of D1, the person skilled in the art would not have considered example 5 of this document, concerning an article comprising in a compartment only PAP as solid component, as a source of information potentially providing a teaching to modify the solid components of the pouches of examples 12 and 13 of D7 in a manner leading to subject-matter falling within the ambit of claim 1 at issue.

6.4 The Board thus concludes that, having regard to the state of the art and common general knowledge, and without hindsight, it was not obvious to the skilled person seeking to solve the technical problem posed, to modify the closest prior art pouches such as to arrive at a pouch falling within the ambit of claim 1 at issue.

6.5 In the Board's judgement, the subject-matter of claim 1 at issue thus involves an inventive step (Articles 52(1) and 56 EPC).

Consequently, the subject-matter of dependent product claims 2 to 10, of claim 11 directed to a method involving the use of the inventive product, and of claim 12, directed to the use of the inventive product, likewise involve an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



D. Magliano

B. Czech

Decision electronically authenticated