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Datasheet for the decision of 31 May 2016

Case Number: T 1137/14 - 3.3.06

Application Number: 08151863.1

Publication Number: 1975225

IPC: C11D3/12, C11D3/386, C11D3/40, C11D3/50, C11D1/83

Language of the proceedings: EN

Title of invention:
Method of cleaning laundry or hard surfaces

Patent Proprietor:
The Procter & Gamble Company

Opponent:
Henkel AG & Co. KGaA

Headword:
Enzymes and pearlescent agent / P&G

Relevant legal provisions:
EPC Art. 52(1), 54(2), 56

Keyword:
Inventive step (yes)

Decisions cited:

Catchword:

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Case Number: T 1137/14 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 31 May 2016

Appellant: (Opponent)	Henkel AG & Co. KGaA Henkelstrasse 67 40589 Düsseldorf (DE)
Representative:	Henkel AG & Co. KGaA CLI Patents Z01 40191 Düsseldorf (DE)
Respondent: (Patent Proprietor)	The Procter & Gamble Company One Procter & Gamble Plaza Cincinnati, OH 45202 (US)
Representative:	Gill Jennings & Every LLP The Broadgate Tower 20 Primrose Street London EC2A 2ES (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 12 March 2014 rejecting the opposition filed against European patent No. 1975225 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	B. Czech
Members:	L. Li Voti
	S. Fernández de Córdoba

Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division to reject the opposition against European patent No. 1 975 225.

II. The patent was granted with fifteen claims, independent claim 1 reading as follows:

"*1. A method of cleaning laundry or hard surfaces with a pearlescent liquid detergent composition comprising greater than 5% anionic surfactant, less than 25% nonionic surfactant, a light-sensitive ingredient and an inorganic pearlescent agent.*"

Dependent claims 2 to 14 relate to more specific embodiments of the method of claim 1.

Independent claim 15 as granted reads as follows:

"*15. Use of an inorganic pearlescent agent to improve stability of light-sensitive ingredients in the composition according to any preceding claim.*"

III. The opposition had been filed on the grounds of Article 100(a) EPC, invoking lack of novelty and lack of inventive step, and of Article 100(c) EPC, extension beyond the content of the application as filed.

The items of evidence cited included:

D2: WO 00/36068 A1;
D3: RÖMPP Online, Version 3.26, 2012, last update December 2007, entry: "Glimmer";
D4: US 5,089,148 A;
D5: US 6,908,890 B2;

D6: Ullmann's Encyclopedia of Industrial Chemistry, 5th Edition, vol. A16, 1990, pages 558 and 559; and

D7: Kirk-Othmer Encyclopedia of Chemical Technology, published online 4 December 2000, entry: "Mica", pages 1 to 20.

IV. The Opposition Division found in its decision that the granted claims complied with the requirements of Article 123(2) EPC and that their subject-matter was novel and inventive.

V. In its statement of grounds, the Appellant (Opponent) only maintained inventive step objections, arguing that the claimed subject-matter was obvious in the light of document D2, taken in combination with any of documents D3 to D7.

VI. In its reply, the Respondent (Patent Proprietor) rebutted all the Appellant's objections and arguments and defended the patent in its granted version. With the reply, it nevertheless also filed two sets of amended claims as first and second auxiliary request, respectively.

VII. With a further letter dated 25 April 2016 the Respondent filed corrected versions of the claims according to the first and second auxiliary requests and two new sets of amended claims as third and fourth auxiliary request, respectively.

VIII. Oral proceedings were held on 13 April 2016.

IX. Requests

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, in the alternative, that the patent be maintained on the basis of one of the sets of claims filed as auxiliary requests 1 to 4 by letter of 25 April 2016.

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

- Document D2, in particular example I thereof, disclosed a heavy duty liquid laundry detergent composition comprising amounts of anionic and nonionic surfactants as required according to claim 1 at issue, light-sensitive ingredients (enzymes) and a fluorescent dye and/or a UV absorber for improving the stability of the enzymes under exposure to light. Therefore, document D2 disclosed a method of cleaning laundry differing from that of claim 1 at issue only insofar as the liquid detergent composition used did not comprise an inorganic pearlescent agent.

- Since this method according to D2 already solved the technical problem of improving the stability under exposure to light of light-sensitive components (enzymes) contained in a liquid laundry detergent composition also comprising the amounts of surfactants required according to claim 1 at issue, the objective technical problem could only be seen in the provision of a further method of cleaning laundry with a liquid detergent composition having a more pleasant aesthetic appearance.

- Document D2 did not disclose explicitly the possible use of a pearlescent agent, but it was known from the prior art (documents D4 and D5) to use inorganic

pearlescent agents like mica for improving the aesthetic appearance of a liquid detergent composition.

- Therefore, it would have been obvious for the skilled person to try incorporating such an inorganic pearlescent agent into the composition used in example I of document D2 in order to improve its aesthetic appearance.

- Moreover, even if the technical problem underlying the claimed invention were considered to consist in the provision of a further method of cleaning laundry with a liquid detergent composition having a more pleasant aesthetic appearance and showing better stability of the light-sensitive ingredients contained therein, the claimed subject-matter still lacked an inventive step.

- Indeed it was plausible that the addition of an inorganic pearlescent agent to the composition of example I of D2 would result in an increased stability on exposure to light of the enzymes contained in such a composition. However, this improved stability was to be expected since it was known from D3 that mica, an inorganic pearlescent agent, was capable of absorbing UV-light and to act as a UV protecting agent.

- Moreover, document D4 taught that a coated mica, used as pearlescent agent in a liquid fabric softener composition, contributed to the stability on exposure to light of some dyes contained in this composition. This teaching could only be understood to imply that mica is capable of protecting the dyes from UV-light and of acting as a UV-absorber. Documents D6 and D7 also suggested the possible use of mica for improving the lightfastness of dyes or other sensitive components.

- Therefore, it was obvious for the skilled person to try the addition of mica to the composition of example I of D2 in order to improve simultaneously its aesthetic appearance and the stability on exposure to light of the light-sensitive enzymes contained therein.

- Furthermore, since the compositions used in the method of claim 1 at issue could also include dyes as light-sensitive components, the skilled person would have considered the disclosure of D4, concerning the protection of dyes on light exposure, and would have obviously used the coated mica disclosed to this end in this document as stabilizer.

- Therefore, the claimed subject-matter lacked an inventive step.

XI. The Respondent's arguments of relevance here can be summarised as follows:

- In the light of the closest prior art (example I of D2), the technical problem to be solved by the claimed invention consisted in the provision of a further method of cleaning laundry with a liquid detergent composition, the composition having both an improved stability, upon exposure to light, of the enzymes (light-sensitive ingredients) contained therein and a more pleasant aesthetic appearance.

- The efficiency of such inorganic pearlescent agents in improving the stability of light-sensitive ingredients contained in the liquid detergent composition was clearly stated in the patent in suit (paragraphs [0001] and [0007]).

- Document D2 did not explicitly mention an inorganic

pearlescent agent as possible optional component. Hence, it would not have been obvious to the skilled person to add such a component to the composition of example I, rather than one or more of the disclosed "other optional components" for increasing its aesthetic appearance. In fact, the cited prior art only suggested the use of an inorganic pearlescent agent for improving the aesthetic appearance of a cosmetic composition (D5) or a fabric softening composition (D4), which compositions did not contain the amount of surfactants required by claim 1 at issue and did not contain enzymes.

- The online disclosure D3 had only been made available to the public after the priority date validly claimed by the patent in suit. In this respect, it was not clearly established that the part of this disclosure referring to the capacity of mica of absorbing UV-light and of acting as a UV protecting agent already belonged to common general knowledge at the priority date of the patent in suit.

- Neither the parts of D3 clearly belonging to the prior art, nor D6 or D7 suggested that mica could be useful for improving the stability, upon exposure to light, of enzymes in a liquid laundry detergent composition of the type used in example I of D2.

- Moreover, even though D4 indeed taught that a coated mica contributed to the stability on exposure to light of specific dyes in a liquid fabric softening composition, it was not explained in this document how (by which mechanism) this improved stability was achieved. Therefore, this disclosure could not be considered to establish that mica would generally act as UV absorber or UV protecting agent for **any** light-

sensitive ingredient, let alone for enzymes contained in a detergent composition, as in the composition of example I of D2.

- Furthermore, since the closest prior art D2 concerned the stabilization of enzymes, the skilled person would not have considered D4, addressing only the stabilization of specific dyes, in the attempt of solving the technical problem underlying the invention.

- Therefore, the skilled person would not have found in the prior art any motivation for trying inorganic pearlescent agents in the composition of example I of D2 in order to provide a liquid laundry detergent composition having both a better stability, upon exposure to light, of the enzymes contained therein and a better aesthetic appearance.

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

Reasons for the Decision

Respondent's main request (patent as granted) - Inventive step

1. The invention

1.1 The invention (see paragraph [0001] and claim 1 of the patent in suit) relates to a method of cleaning laundry or hard surfaces with a pearlescent liquid detergent composition which comprises a light-sensitive ingredient.

Moreover, the invention relates (see claim 15) to the use of an inorganic pearlescent agent to improve

stability of light-sensitive ingredients in such a composition.

1.2 Light-sensitive ingredients are defined in the description (paragraph [0022]) "*as those ingredients that are destroyed, deactivated or activated on exposure to light. ... Light sensitive ingredients include enzymes, vitamins, perfumes, dyes and mixtures thereof.*"

1.3 As also stated in the description of the patent (paragraph [0005]), "*[p]ackaging the composition in a transparent or translucent package increases the risk of destabilization of these light-sensitive ingredients. It is important to protect these light sensitive ingredients as far as possible in order to maintain stability of the product, aesthetics and performance for as long as possible. Especially since a product may remain in storage or on shelf for some time, potentially a period of several months.*"

1.4 As regards the goal(s) of the invention the following is stated in the description (paragraph [0007]):

"*... it has surprisingly been found that compositions comprising an inorganic pearlescent agent exhibit improved light-sensitive ingredient stability.*"

2. Closest prior art

2.1 Both parties agreed that document D2 represents the closest prior art. Considering the similarities in terms of the issues addressed and the compositions disclosed, the Board has no reason to take another stance.

2.2 In fact, D2 concerns (see page 1, lines 5 to 9, and page 3, lines 2 to 5) the improvement of the stability, on exposure to light, of enzymes (light-sensitive ingredients) contained in a liquid laundry detergent composition enclosed in a transparent bottle. This document thus discloses also, implicitly, a method of cleaning laundry with such a composition.

2.3 More particularly, a method of cleaning laundry with the liquid detergent composition of example I of D2 (pages 27 to 29), represents the most appropriate starting point for the evaluation of inventive step.

The liquid laundry detergent composition used according to said example I contains (tables 1 to 3) 6 to 8% by weight of nonionic surfactants (Neodol 25-9), 18 to 24% anionic surfactants (alcohol ethoxy sulfate and linear alkylbenzene sulfonate), protease and lipase enzymes (light-sensitive ingredients) and a fluorescent dye (fluoresor dye or PR f-dye) and/or a UV absorber (Uvinal MS-40) for stabilizing the enzymes upon irradiation by UV light.

It was common ground between the parties that the composition used in D2 differs from that used in the method of cleaning laundry according to claim 1 at issue only in that it does not contain an inorganic pearlescent agent.

3. The technical problem

3.1 The Appellant submitted that the technical problem underlying the invention, seen in the light of the closest prior art, consisted merely in the provision of an alternative method for cleaning laundry with a liquid detergent composition having a **more pleasant**

aesthetic appearance.

3.2 For the Respondent the objective technical problem consisted, instead, in the provision of an alternative method for cleaning laundry with a liquid detergent composition providing simultaneously **improved stabilization on exposure to light of the light sensitive ingredients, i.e. the enzymes contained therein, and a more pleasant aesthetic appearance.**

3.3 As pointed out by the Respondent during oral proceedings, the patent in suit (paragraphs [0001] to [0003] and [0007]) explicitly states that the addition of an inorganic pearlescent agent, besides providing pearlescence to the liquid detergent composition in which is contained, further improves the stability on exposure to light of the light-sensitive ingredients contained therein.

3.4 Therefore, the Board sees no reason for disregarding this aspect of the goals to be achieved by the invention and therefore accepts that the technical problem is to be formulated as proposed by the Respondent (point 3.2, *supra*).

4. The solution

As the solution to this technical problem the patent in suit proposes the method for cleaning laundry with a liquid detergent composition according to claim 1, which is characterised in particular in that it comprises "*greater than 5% anionic surfactant, less than 25% nonionic surfactant, a light-sensitive ingredient and an inorganic pearlescent agent*".

5. Success of the solution

5.1 It is undisputed that the composition used according to claim 1 at issue has a more pleasant aesthetic appearance, attributable to the inorganic pearlescent agent component, as compared to the composition used in example I of D2, which is not pearlescent and does not appear to comprise ingredients supposed to improve its aesthetic appearance.

5.2 During oral proceedings, the Respondent declared with reference to the patent in suit (paragraphs [0001] and [0007]) that even though the composition used in example I of D2 already provides stability, upon exposure to light, of the enzymes (light-sensitive ingredients) contained therein (see tables 2 and 3 on pages 29 and 30 of D2), the addition of an inorganic pearlescent agent would further improve said stability.

5.3 The Appellant did not dispute this statement and expressly accepted that such an improvement was plausible.

5.4 The Board thus has no reason either to doubt that the method of claim 1 at issue effectively solves the technical problem identified by the Respondent (3.2, *supra*).

6. (Non)obviousness of the solution

6.1 Thus, it remains to be evaluated whether it would have been obvious to the skilled person, having regard to the state of the art and common general knowledge, to add an inorganic pearlescent agent to the composition described in example I of D2 in order to improve the stability of the enzymes (light-sensitive ingredients)

contained therein on exposure to light and to provide, at the same time, a more pleasant aesthetic appearance to the composition.

6.2 Document D2

6.2.1 According to D2, the compositions disclosed therein may contain a number of other optional ingredients (page 19, lines 17 to 18) including e.g. adjuvants which may give additional desired properties of aesthetic nature (page 20, lines 10 to 12). However, D2 does not explicitly mention or suggest the possible addition of an inorganic pearlescent agent, let alone the possibility of further enhancing the stability, upon exposure to light, of the enzymes contained in the disclosed compositions by adding such an inorganic pearlescent agent.

6.2.2 Therefore, the skilled person would not have found in D2 taken alone any motivation for adding an inorganic pearlescent agent to the composition of example I with the expectation of simultaneously enhancing the enzyme stability upon exposure to light and the appearance of the composition.

6.3 Common general knowledge - Document D3

6.3.1 Document D3 is an Internet disclosure of an online encyclopedia of chemical technology and could thus, in principle, be considered to represent common general knowledge. However, D3 (last page of the print-out) bears a copyright date of 2012 and an indication that the last update occurred in December 2007, i.e. after the unchallenged priority date of the patent in suit of 20 March 2007. Therefore, the content of this

document was made available to the public only after the valid priority date of the patent in suit.

6.3.2 However, since it reflects common general knowledge, it can be assumed that at least part of its information content was already available to the public before the priority date of the patent in suit. This appears to be confirmed by the fact that all the scientific literature cited on the last page of the print-out was published before 2007.

6.3.3 Therefore, those texts parts of D3 which refer explicitly to one or more of these references, or which concern explicitly a time frame before 2007, report without any doubt technical information belonging to the state of the art.

6.3.4 The Appellant referred, specifically, to a passage (page 3, fourth full paragraph of the printed version of D3) relating to the properties ("Eigenschaften") of mica, which is an inorganic pearlescent agent. In this passage it is stated that mica absorbs UV-light and can therefore be used as UV protecting agent ("als UV-Schutzmittel").

However, this particular passage does not contain any reference number or any other indication that the statement made in therein is based on the content of one or more of the prepublished references listed at the end of document D3.

6.3.5 Therefore, for the Board, it was not convincingly established that this passage and, in particular, the sentence expressing that mica absorbs UV-light and can therefore be used as UV protecting agent, is based on information derived from the prepublished references

indicated in D3, i.e. that it was not only added during an update of the document after the priority date of the patent in suit.

Hence, the Board concludes that this specific element of information contained in D3, cited by the Appellant, is not part of the state of the art under Article 54(2) EPC and must thus be disregarded in the evaluation of inventive step.

6.3.6 It is undisputed that those text parts of D3 which can actually be considered to relate to information clearly belonging to the relevant state of the art, do not contain any suggestion that mica could be useful for improving the stability, upon exposure to light, of enzymes contained in a liquid laundry detergent composition of the type used in example I of D2.

6.4 Common general knowledge - Documents D6 and D7

6.4.1 Documents D6 and D7 are excerpts from two encyclopedias of chemical technology representing relevant common general knowledge at the priority date of the patent in suit.

6.4.2 Document D6 teaches (page 559, left column, lines 1 to 3) that mica can be used *inter alia* for enhancing lightfastness of paint. However, paints are compositions which are chemically and physically not comparable to a liquid detergent composition.

Therefore, the skilled person would not derive from this teaching that mica could be useful for improving the stability on exposure to light of enzymes (or other light-sensitive ingredients) contained in a liquid detergent composition.

6.4.3 D7 teaches *inter alia* (page 17, paragraph 8.4.3, lines 3 to 5) that "*Micronized mica ... is also used in cosmetic applications ... because* ***it has*** *the advantages of high ultraviolet light stability...*" (emphasis added).

Therefore, D7 only discloses that mica itself is stable on exposure to light but does not contain any suggestion that mica could be useful for improving the stability of light-sensitive ingredients in a liquid detergent composition.

6.4.4 Hence neither of these documents contains a suggestion that mica could be useful for improving the stability on exposure to light of the enzymes contained in a liquid laundry detergent composition of the type used in example I of D2.

6.5 Document D4

6.5.1 Document D4 concerns (column 1, lines 6 to 8 and 40 to 42) a liquid fabric conditioning composition wherein a variety of colorants is used to produce a desirable peach color. It is undisputed that D4 does not disclose the use of these compositions for cleaning fabrics, and that the disclosed compositions do not comprise an anionic surfactant as required according to claim 1 at issue.

6.5.2 According to the description of D4 (column 6, lines 5 to 11), the fabric conditioning compositions may also comprise an agent which produces a pearlescent appearance, such as titanium dioxide coated mica. Such a coated mica is commercially available under the trademark Afflair® 111 (column 7, lines 29 to 32). This mica is used in different relative amounts in the

compositions G, H and I, which also comprise a mixture of dyes for providing the desired peach color (column 9, table). In this context it is stated in D4 (column 9, lines 18 to 22) that the presence of Afflair® 111 "*contributes to their color stability when exposed to ... sunlight long term. Example 2 illustrates the desirable role that Afflair® 111 plays to protect the colorant system when exposed to direct sunlight.*"

6.5.3 Thus, according to the teaching of D4, the coated mica improves the stability, upon exposure to light, of the dyes contained in the composition in question. For the Board, document D4 does not, however, teach that such a coated mica would generally act as UV-light absorber or UV-protecting agent. Hence, excluding hindsight considerations, D4 does not suggest that the coated mica could also be suitable for improving the stability, upon exposure to light, of any light-sensitive material, let alone for improving the stability of enzymes in a detergent composition.

6.5.4 Therefore, even if the skilled person, starting from D2 / example I and seeking to solve the technical problem of further improving the stability, upon exposure to light, of the enzymes contained therein, would (*arguendo*) have considered the disclosure of document D4, relating to different liquid compositions for different purposes, he would not have found in D4 any suggestion that coated mica could lead to a significant further improvement of the stability, upon exposure to light, of the enzymes contained in the composition, the latter being chemical compounds not at all comparable to the dyes to be UV-protected according to D4 and being consistently degraded (lossing activity) already after an exposure to UV-light of only 3 days (see table 2, right column, on page 29 of D2).

6.5.5 According to a further line of argument, the Appellant submitted that the method of claim 1 at issue could also include dyes as light-sensitive components. Therefore, the skilled person would have considered the disclosure of D4, concerning the protection of dyes on light exposure, and would have obviously used the coated mica disclosed to this end in this document as stabilizer.

These considerations of the Appellant are, however, not convincing, since they disregard the fact that the method of D2, taken as the starting point for the problem-solution approach, i.e. a method of cleaning laundry according to example I of D2, involves the use of a liquid detergent **cleaning** composition comprising **enzymes** and **not dyes** as light-sensitive ingredients.

The skilled person would thus only consider relevant the information contained in D4 as regards the stability of dyes once he became aware of the present invention, i.e. only based on an *ex-post facto* analysis and an incorrect application of the problem-solution approach.

6.5.6 In summary, for the Board, the skilled person, starting out from D2 /example I and seeking to solve the technical problem posed (point 3.2, *supra*) would not even have considered document D4, but assuming *arguendo* he would have done so, he would not have found therein an incitation to incorporate the pearlescent coated mica disclosed therein as UV-protecting agent into a composition as used in D2 / example I.

6.6 Document D5

6.6.1 Document D5 (column 1, lines 5 to 7 and 41 to 47;

column 3, lines 9 to 13) concerns a liquid pearlescent "cleaning composition" containing coated mica and, optionally, 0 to 5% of a surfactant.

6.6.2 This composition is not used for cleaning fabrics or hard surfaces but appears to be intended for cosmetic use. Moreover, this document does not contain any suggestion that coated mica could serve the purpose of improving the stability, on exposure to light, of some light-sensitive ingredient(s).

6.6.3 Therefore, also document D5 does not contain any suggestion that mica could be useful for improving the stability on exposure to light of the enzymes contained in a liquid laundry detergent composition of the type used in example I of D2.

6.7 The Board thus concludes that the skilled person would not have found in the prior art, or based on common general knowledge, any motivation for incorporating inorganic pearlescent agents into the composition of example I of D2 in order to solve the technical problem posed (point 3.2, *supra*).

6.8 As regards the alternative embodiment encompassed by claim 1 (wording under II, *supra*), i.e. the method for cleaning **hard surfaces**, the Appellant did not submit any argument specifically addressing this alternative.

6.8.1 The Board is also convinced that the cited documents do not concern the cleaning of hard surfaces and do not contain any teaching that would have led the skilled person to a method of cleaning hard surfaces in accordance with claim 1 at issue.

6.8.2 Therefore, the Board can only conclude that this

alternative embodiment of claim 1 was also not obvious to the skilled person.

6.9 In the Board's judgement, the subject-matter of claim 1 and, consequently, also that of claims 2 to 14 dependent on claim 1, thus involve an inventive step (Articles 52(1) and 56 EPC).

7. Inventive step - Use claim 15

7.1 Claim 15 concerns the use of an inorganic pearlescent agent to improve stability of light-sensitive ingredients in a composition according to any of the preceding claims, i.e. a liquid detergent composition for cleaning fabrics or hard surfaces and comprising greater than 5% anionic surfactant, less than 25% nonionic surfactant and a light-sensitive ingredient.

7.2 The Appellant did not submit any specific argument addressing this particular embodiment.

7.3 Based on the analysis of the prior art and common general knowledge invoked (points 6.2 to 6.6, *supra*), the Board is also satisfied that the skilled person would not have found therein any motivation
- for using an inorganic pearlescent agent as an additional component of a liquid laundry detergent composition of the type described in example I of D2 in order to further stabilize the enzymes contained therein against exposure to light or
- for using an inorganic pearlescent agent in a liquid detergent composition for cleaning hard surfaces in order to improve the stability of light-sensitive ingredients contained therein.

7.4 The subject-matter of claim 15 thus also involves an

inventive step (Articles 52(1) and 56 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Magliano B. Czech

Decision electronically authenticated