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Datasheet for the decision of 25 October 2012

Case Number: T 0939/10 - 3.3.06

Application Number: 03726900.8

Publication Number: 1506274

IPC: C11D 3/00, C11D 3/37, C11D 3/20

Language of the proceedings: EN

Title of invention:
A liquid laundry conditioning composition containing a fabric-softening silicone

Patentee:
THE PROCTER & GAMBLE COMPANY

Opponents:
Reckitt Benckiser (UK) Limited
Unilever PLC

Headword:
Laundry conditioning composition/PROCTER & GAMBLE

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step: yes"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0939/10 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 25 October 2012

Appellant: (Patent Proprietor)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 15 March 2010 revoking European patent No. 1506274 pursuant to Article 101(3)(b) EPC.

Composition of the Board:

Chairman: P.-P. Bracke
Members: P. Ammendola
B. Müller

Summary of Facts and Submissions

I. This appeal is from the decision of the Opposition Division to revoke European patent No. 1 506 274, concerning a liquid laundry detergent composition containing a fabric softening silicone.

II. The granted patent contains twenty-two claims which are identical to those of the application as filed. In particular, granted claims 1, 6 and 22 read, respectively:

"*1. A liquid softening through the wash laundry detergent composition comprising:*

(a) at least 0.5% by weight of the composition, of a fabric softening silicone; and
(b) a fatty acid; and
(c) a surfactant system, the surfactant system comprising:

(i) at least 75% by weight of the surfactant system, of a non-alkoxylated anionic surfactant; and
(ii) less than 25% by weight of the surfactant system, of an alkoxylated surfactant; and

(d) one or more laundry detergent adjunct ingredients."

"*6. A composition according to any preceding claim, wherein the fabric-softening silicone is in the*

form of an emulsion having a primary particle size of from 1 micrometer to less than 50 micrometers."

and

"*22. Use of a composition according to any preceding claim to enhance the deposition of a silicone onto fabric during a laundering process.*"

Also the remaining claims 2 to 5 and 7 to 21 as originally filed and granted define preferred embodiments of the composition of claim 1.

III. The patent had been opposed on the grounds of insufficient disclosure and lack of novelty and of inventive step. The Opponents had referred to, *inter alia*, the documents

(2) = WO 99/18177

and

(11) = WO 97/31997.

During the opposition proceedings the Patent Proprietor had filed under cover of a letter dated 10 January 2008 an amended set of twenty-one claims as its sole request.

IV. Claim 1 of this set (hereinafter **claim 1**) corresponds to the combination of claims 1 and 6 as granted and, thus, only differs from granted claim 1 in that the passage of this latter reading

"*(a) at least 0.5% by weight of the composition, of a fabric softening silicone; and*"

has been amended to:

"*(a) at least 0.5% by weight of the composition, of a fabric softening silicone wherein the fabric softening silicone is in the form of an emulsion having a primary particle size of from 1 micrometer to less than 50 micrometers; and*".

The remaining claims 2 to 21 of the Patent Proprietor's request (hereinafter **claims 2 to 21**) are respectively identical to granted claims 2 to 5 and 7 to 22, renumbered where necessary.

V. The Opposition Division found this set of claims to comply with Articles 54, 83, 123(2) and (3) EPC.

However, the subject-matter of claim 1 thereof was found obvious in view of the combination of documents (2) and (11).

In particular, the Opposition Division considered that

(i) the claimed compositions aimed at solving the technical problem of achieving simultaneously fabric softening performance (hereinafter also indicated as **softening performance**) and fabric cleaning and whiteness-maintenance performance (hereinafter also indicated as **cleaning performance**)

and

(ii) that the same problem had already been solved by the apparently solid composition of Example 5 of document (2), from which the compositions of claim 1 only differed in that these latter were liquid and required the particles of the silicone emulsion ingredient to have a primary particle size from 1µm to less than 50µm.

The Opposition Division found that the sole technical problem credibly solved by the claimed compositions vis-à-vis the prior art was the provision of an alternative to this latter.

Since document (2) itself explicitly indicated that the same ingredients present in the solid composition of Example 5 could as well be used to formulate liquid compositions and since document (11) indicated that silicone microemulsions with particle size of 5µm to 500µm generated a certain degree of softness and were commonly used in the field of laundry compositions, the combination of these citations would have lead the skilled person to prepare a composition according to claim 1 in the expectation to achieve softening and cleaning of the washed fabrics.

Hence, the request of the Patent Proprietor was found contrary to Article 56 EPC and, thus, refused.

VI. The Patent Proprietor (hereinafter **Appellant**) lodged an appeal against this decision. It filed an **e**xperimental **r**eport (hereinafter **ER**) with the statement setting out the grounds of appeal.

VII. The Appellant argued substantially as follows.

As indicated in paragraphs [0002] to [0005] of the patent-in-suit, the silicone emulsions used as softening ingredients in the laundry compositions of the prior art impaired the cleaning performance of these latter. Hence, the claimed subject-matter aimed at rendering available a liquid laundry composition simultaneously producing levels of softening and cleaning performance that were not achievable in combination by the laundry compositions of the prior art. From the whole of the patent specification it would be apparent that this problem had been solved by formulating a silicone-containing laundry composition comprising a fatty acid and a specific surfactant system, and preferably by selecting the particle size of the silicone emulsion in the range specified in claim 1.

The Appellant concurred with the Opponents (hereinafter **Respondents**) that the skilled person could have started from the liquid composition of e.g. Example 1 of document (2). However, the silicone conditioning agents referred to in this prior art - and, thus, also the ingredient of Example 1 identified as an "*Amino-functional silicone emulsion*" (without specifying its particle size) - were silicone "*micro-emulsions*", i.e. thermodynamically stable emulsions of particles with diameter well below 1µm.

Document (2) was completely silent as to a possible influence of the particle size of the silicone emulsion ingredient onto the cleaning and softening performances.

Instead, the ER demonstrated that an invention example (with a silicon particle size of 47.471µm) provided "intermediate" levels of softening and cleaning performances vis-à-vis two comparative compositions wherein the silicone particle size was either 0.107µm or 71.526µm, i.e. either below or above the claimed range. In particular, it also demonstrated that increasing the size of the silicone particles in the emulsion, on the one hand, favoured the softening of the washed fabrics and, on the other hand, decreased the cleaning performance. Hence, these data confirmed that the silicone particle size required in the presently claimed compositions (already indicated as preferable in paragraph [0012] of the patent as granted and claimed in granted claim 6) contributed to the achievement of the aimed superior combination of softening and cleaning performances.

Thus, the subject-matter of claim 1 was not obvious in view of the disclosure of document (2) because this prior art would not allow to predict that a superior combination of softening and cleaning performances could be achieved by using emulsions with a silicone particle size lying in the range of 1µm to less than 50µm.

Nor were the claimed compositions rendered obvious by the disclosure of document (11) which not only was silent as to the reverse dependency of the cleaning performance on the silicone particle size but explicitly indicated that particle sizes of the silicone emulsions of at least 50 µm were particularly beneficial to softening performance. Hence, document

(11) would have inevitably lead the skilled person away from the invention.

The Appellant rejected the criticisms of the Respondents in respect of the ER by arguing that their objections were unsupported by any experimental counter-evidence and unjustified, since the provided data compared the cleaning and softening performances of an example of the claimed compositions to those provided by two comparative examples comprising silicone emulsions with a particle size either of below 1µm, i.e. comparable to that presumable for the silicone ingredient used in Example 1 of document (2), or of about 70µm, i.e. comparable to the smallest sizes (of 60µm or 80µm) of the silicone emulsion ingredients actually used in the examples of document (11).

VIII. The Respondents considered Example 1 of document (2) to represent the most suitable starting point for the assessment of inventive step.

They disputed the Appellant's unsupported allegation that the generally accepted meaning of the term "*micro-emulsions*" as used in document (2) was that of emulsions having a particle size of less than 1µm.

Hence, the subject-matter of claim 1 differed from this prior art only for the additional presence of a fatty acid and for the arbitrary selection among the silicone emulsions already possibly present in this prior art of those emulsions which possessed particle sizes of from 1µm to less than 50µm.

The Respondents stressed that the Appellant had provided no experimental data aiming at demonstrating that the fatty acid ingredient contributed to the achievement of the aimed superior combination of cleaning and softening performances.

As to the alleged effect of the selected range for the silicone particle size, the experimental data reported in the ER were manifestly irrelevant since they did not compare the claimed compositions with the compositions disclosed in document (2).

Moreover, the fact that these data demonstrated that an invention example provided "intermediate" levels of softening and cleaning performance did not imply that the combination of softening and cleaning levels produced by the exemplified composition would be regarded by the final user as superior to those provided by the two comparative examples, let alone as adequate.

Finally, this sole invention example in the ER was remote from the lower end of the 1µm to less than 50µm range. Hence, the experimental data provided in these appeal proceedings were in any case manifestly insufficient to render credible the alleged achievement of a superior combination of cleaning and softening performances across the whole claimed range.

Thus, the only technical problem credibly solved by the claimed compositions vis-à-vis Example 1 of document (2) remained that of providing further laundry compositions.

A skilled person who was also aware of the teachings of document (11) that laundry detergent compositions preferably comprised fatty acid builders and silicone emulsions with a particle size ranging between 5µm and 500µm, would thus arrive at modifications of Example 1 of document (2) falling under present claim 1 by just arbitrarily selecting some of these alternative ingredients for laundry compositions suggested in document (11). The Respondents did not dispute that document (11) actually disclosed that increasing the particle size of the silicone particles favoured the fabric softening performance, but considered this insufficient to lead away from the patented subject-matter a skilled person who was just searching for an alternative to the prior art.

Hence, the claimed subject-matter was obvious in view of the prior art.

IX. The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the set of claims filed with the letter of 10 January 2008.

The Respondents requested that the appeal be dismissed.

Reasons for the Decision

1. The Board sees no reason to deviate from the finding of the Opposition Division that the request of the Appellant complies with Articles 54, 83 and 123(2) and (3) EPC. Since the Respondents have raised no objection

in view of these provisions of the EPC, no further reasons need to be given in these respects.

2. Article 56 EPC: claim 1

2.1 Claim 1 (see above Section IV of the Facts and Submissions) defines a liquid laundry composition containing at least 0.5 wt.% of a fabric softening silicone in the form of an emulsion having a primary particle size of from 1µm to less than 50µm, and further comprising a fatty acid, a surfactant system consisting mostly of non-alkoxylated anionic surfactants and at least one (further) laundry detergent adjunct ingredient.

According to the patent-in-suit the claimed compositions aim at achieving in combination "*good fabric softening performance*" and "*adequate cleaning and whiteness-maintenance performance*" (see paragraphs [0005] and [0006]).

The patent-in-suit does not provide any precise definition of the level of softening and cleaning corresponding to these generic expressions. It is nevertheless apparent from the initial description of the background art in paragraphs [0002] to [0005] of the patent-in-suit (see in particular, the passage in paragraph [0005] reading "*To date, all known liquid softening through the wash laundry detergent compositions that comprise a fabric softening silicone and that have good fabric softening performance, do not have an adequate cleaning and whiteness-maintenance performance*") that fabric softening silicone ingredients impair the cleaning results provided by

laundry compositions containing them and, thus, that the silicone-containing laundry composition of claim 1 is stated to produce a combination of softening and cleaning that is superior to that already provided by the silicone-containing laundry composition of the prior art. Hereinafter, the aimed (and allegedly achieved) combination of properties is also indicated as a **superior combination of softening and cleaning performances**.

2.1.1 The Board notes that, as described in the first paragraph at page 2 of document (2), the laundry compositions disclosed in this citation already achieve in combination good cleaning and a soft feel of the washed fabric and, thus, represent a reasonable starting point for the assessment of inventive step.

The Board considers also that the requirement in claim 1 under consideration as to the liquid state of the claimed compositions implies a number of other characteristics (e.g. in terms of the form in which the ingredients have to be present in order to obtain a stable solution / suspension).

Thus, the Board concurs with the Parties that the undisputedly liquid laundry composition of Example 1 described in the Table at page 9 of document (2) represents a starting point for the assessment of inventive step that is more appropriate than Example 5 of the same citation (used as prior art of departure by the Opposition Division) which appears instead to be a solid composition.

2.1.2 The Board notes preliminarily that no additional information has been provided by any of the Parties as to the particle size of any of the apparently commercial silicone emulsions used in the examples of document (2). In particular, no such information is available in respect of the "*MAGNASOFT Em.410 (Witco)*" ingredient of Example 1 of document (2) identified in the Table at page 9 just as "*Amino-functional silicone emulsion*".

Nevertheless, the Appellant has argued that this ingredient would most likely be one of the silicone "*micro-emulsions*" indicated in this citation (at page 3, lines 7 to 9) as the most preferred silicone fluid ingredients. In the opinion of the Appellant, the term "*micro-emulsions*" would be interpreted by the skilled reader of document (2) as indicating thermodynamically stable emulsions of particles with diameter well below 1µm.

However, the Appellant has provided no evidence of the general recognition of the proposed definition of the term "*micro-emulsions*" and the Respondents have disputed the existence of such generally accepted definition.

Thus, the Board disregards this unsupported allegation of the Appellant and finds that the particle size of the silicone emulsion in the prior art of departure is undisclosed.

2.1.3 Accordingly, the claimed subject-matter is found to differ from the laundry composition of Example 1 of document (2) in that the former requires:

a) the silicone emulsion ingredient to be selected so as to have a particle size of from 1µm to less than 50µm

and

b) the additional presence of a fatty acid.

2.2 The Appellant has maintained that the experimental data of the ER demonstrated that the silicone emulsion particle size in the range of from 1µm to less than 50µm contributed to the achievement of a combination of softening and cleaning performances superior to those achieved in the prior art.

2.2.1 This has been disputed by the Respondents for three reasons:

Firstly, the silicone emulsions used in the two comparative examples of the ER are not necessarily representative of any of the silicone emulsions used in the examples of document (2), since this citation is silent on the particle size of the used silicone ingredients.

Secondly, the fact that the invention example produces a combination of softening and cleaning performance levels that is "intermediate" between those provided by the two comparative examples (wherein the particle size of the used silicone emulsions is either below or above the claimed range) does not imply that such combination of "intermediate" softening and cleaning levels is also regarded by the final user as superior to those

provided by any of the two comparative examples, let alone as adequate.

Thirdly, the ER describes a single composition according to the invention wherein the particle size of the used silicone emulsion is 47.471µm and, thus, is only representative of the upper portion of claimed range.

2.2.2 The Board notes preliminarily that the silicone emulsion of the comparative example in the ER containing the smallest silicone particles has not been proved to be in accordance with the meaning of "*micro-emulsion*" as used in document (2) for defining the preferred form of such ingredient (see above point 2.1.2).

Hence, the Board concurs with the Respondents that the data in the ER represent no conclusive evidence that the combination of softening and cleaning levels achieved by the presently claimed compositions is more satisfactory than that already achieved in prior art.

2.2.3 In the Board's opinion, the Respondents correctly observed that the fact that in the ER the silicone emulsion with particle size in the claimed range provides "intermediate" levels of softening and cleaning performances vis-à-vis the two comparative examples, does not necessarily imply that such combination of "intermediate" levels would be considered by the final user as preferable to the corresponding combination of levels provided by comparative examples, let alone as sufficiently satisfactory.

2.2.4 Nevertheless, neither these two findings favourable to the Respondents nor the undisputable fact (also stressed by the Respondents) that the sole invention example used for the ER comprises a silicone with a particle size that is very close to the upper limit only of the claimed range, have any bearing on the credibility of the Appellant's argument that the data in the ER prove that upon increasing the silicone particle size from below to above the claimed range one observes not only an increment of the composition softening performance (as undisputedly also suggested to the skilled reader of e.g. document (11)) but also - and surprisingly - a decrement of its cleaning performance.

Hence, in the opinion of the Board, these data at least attribute some credibility to the disclosure given in the passages of the patent specification already considered above (see point 2.1) that the claimed compositions, wherein the particle size of the silicone emulsion is preferably from 1µm to less than 50µm (see paragraph [0012] and claim 6 of the patent as granted), do achieve the aimed superior combination of softening and cleaning performances. In other words, the Appellant has at least provided evidence of a surprising fact (i.e. the surprisingly opposite dependency of the softening performance and of the cleaning performance in respect of the silicone particle size) which explains why the claimed particle size range may indeed correspond to the achievement of a combination of softening and cleaning levels that was not observed or to be expected in the prior art and,

thus, also not to be expected from the laundry composition of Example 1 of document (2).

2.2.5 Accordingly, the Board comes to the conclusion that the experimental data in the ER render credible that the combination of softening and cleaning performances achieved by the claimed compositions is superior to that provided by the composition of Example 1 of document (2) as well.

Hence, the Board finds that the subject-matter of claim 1 solves the posed technical problem vis-à-vis the prior art.

2.3 Under these circumstances the assessment of inventive step boils down to the question whether the person skilled in art would reasonably expect that the aimed superior combination of softening and cleaning performances is obtainable by those modifications of the prior art that would have lead to the subject-matter of claim 1: i.e., *inter alia*, by replacing the silicone emulsion (of unknown particle size) used in Example 1 of the prior art by means of silicone emulsions with a particle size falling in the claimed range of from 1µm to less than 50µm.

2.3.1 It is undisputed that document (2) itself does not refer to silicone emulsions with such a particle size and does not attribute explicitly or suggest any influence of the silicone particle size onto the relevant properties, other than that possibly implied by the vague indication (already discussed above) that the preferred emulsions are (not further defined) "*micro-emulsions*". Hence, this citation *per se* cannot

contain a pointer to the claimed particle size range of from 1µm to less than 50µm.

2.3.2 It is undisputed that document (11) discloses the possible use as fabric softening ingredients in laundry compositions of silicone emulsions with a particle size of from 5 to 500µm (see claim 1 of document (11)). However, it is also undisputed that the whole teaching of this citation is that silicone emulsions with a particle size of 50µm or more provide better softening (compare in document (11) the indication at page 3, lines 13 to 14, that the most preferable particle size is from "*about 50 to about 200 µm*", with the data in the table of Example 1 showing an increase in softening performance when increasing the particle size of the silicone emulsion from less than 5µm to 200µm, i.e. the effect resumed at lines 19 to 21 of page 31, in the sentence reading "*As shown above, the 60µm and 200µm size silicone emulsions provide significantly better softness than the control with nil silicone emulsion and Formula B with an emulsion size of less than 5µm*").

Hence, it is apparent to the Board that the combination of documents (2) and (11) would not motivate a skilled person who is aiming at a combination of softening and cleaning superior to that provided in Example 1 of document (2) to replace the silicone emulsion used therein by means of another silicone emulsion with a particle size of less than 50µm, as the combination of these documents would rather only suggest that such relatively small silicone sizes result in lower softening.

2.4 Thus, and in the absence of any reason possibly suggesting to the skilled person that a size of the silicone particles in the emulsion of less than 50µm, could nevertheless be beneficial to the cleaning performance of silicone-containing laundry compositions, the Board comes to the conclusion that the subject-matter of claim 1 of the Appellant's sole request provides a solution to the posed problem that is not obvious in view of the available prior art. Accordingly, the claimed composition is also found to comply with Article 56 EPC.

3. Article 56 EPC: claims 2 to 21

Since claims 2 to 20 define preferred embodiments of the composition of claim 1 (see above Section IV of the Facts and Submissions), their subject-matter is also found to comply with Article 56 EPC for the same reasons indicated above for claim 1.

Since claim 21 defines the use of the composition according to any of the preceding claims during a laundering process (see above Section IV of the Facts and Submissions) also its subject-matter is found to comply with Article 56 EPC for substantially the same reasons as those indicated above for claim 1.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to maintain the patent on the basis of the set of claims filed with the letter of 10 January 2008 and a description to be adapted.

The Registrar: The Chairman:

D. Magliano P.-P. Bracke