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Datasheet for the decision of 6 February 2015

Case Number: T 0917/13 - 3.3.06

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Title of invention:
Cleaning composition

Patent Proprietor:
THE PROCTER & GAMBLE COMPANY

Opponent:
Henkel AG & Co. KGaA

Headword:
Liquid surface tension / PROCTER & GAMBLE

Relevant legal provisions:
EPC Art. 52(1), 56, 108
EPC R. 99(2)

Keyword:
Admissibility of the appeal (yes)
Inventive step (yes) : non-obvious alternative

Decisions cited:
T 0220/83, T 0285/91, T 0355/97

Catchword:

Europäisches Patentamt
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Case Number: T 0917/13 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 6 February 2015

Appellant: (Opponent)	Henkel AG & Co. KGaA Henkelstrasse 67 40589 Düsseldorf (DE)
Representative:	Henkel AG & Co. KGaA Patente (FJI) 40191 Düsseldorf (DE)
Respondent: (Patent Proprietor)	THE PROCTER & GAMBLE COMPANY One Procter & Gamble Plaza Cincinnati, OH 45202 (US)
Representative:	CLARKE, Lionel Paul Gill Jennings & Every LLP The Broadgate Tower 20 Primrose Street London EC2A 2ES
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 1 February 2013 rejecting the opposition filed against European patent No. 1305388 pursuant to Article 101(2) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division to reject the opposition against European patent no. 1 305 388.

II. Claim 1 of the patent as granted reads as follows:

"*1. A hard surface cleaning composition for removing cooked-, baked- or burnt-on soils from cookware and tableware; the composition comprising a soil swelling agent and a spreading auxiliary and having a liquid surface tension of less than 25 mN/m and a pH as measured in a 10% solution in distilled water of at least 10.5 at 25°C.*"

Dependent claims 2 to 18 relate to specific embodiments of the hard surface cleaning composition of claim 1.

III. The opposition had been filed on the grounds of Article 100(a) and (b) EPC, invoking lack of novelty, lack of inventive step and insufficiency of the disclosure.

The items of evidence cited include:

D2: US 5 929 007 A;
D6: Experimental data submitted by the Applicant on 11 August 2006 during substantive examination;
D10: Experimental data submitted by the Patent Proprietor with letter of 1 October 2012; and
D10a: Supplementary information concerning the data shown in D10, filed during oral proceedings of 4 December 2012.

IV. The Opposition Division found in its decision that the invention was sufficiently disclosed and that the

subject-matter of the claims as granted was novel and involved an inventive step over the cited prior art.

In particular, as regards inventive step, the Opposition Division found (points 4.3 to 4.6 of the reasons) that "*The subject-matter of claim 1 differs from D2 in that the LST* (liquid surface tension) *is less than 25 mN/m... No technical effect appears to be associated with this difference over the prior art...no technical effect has been demonstrated in relation to the closest prior art, i.e. examples 1-4 of D2...The objective problem to be solved is therefore reformulated as simply how to provide alternative compositions for removing cooked soil...Even were the skilled person to select the possibility of adapting the compositions of D2 by reducing LST, there is no incentive for this to be reduced explicitly to a value less than 25 mN/m...there is no motivation as to why they would do so via the combination of features according to present claim 1, therefore said claim represents a non-obvious alternative which is considered to be inventive.*"

V. The Appellant (Opponent) filed with the statement of grounds of appeal further experimental data and a further document, labelled D11, describing the method for the assessment of cleaning benefits used in the experimental data. It maintained its view that the claimed subject-matter lacked an inventive step, but no longer maintained objections under Article 100(b) EPC or regarding novelty.

VI. The Respondent contested in its reply of 16 October 2013 the admissibility of the appeal and maintained its view that the claimed subject-matter did involve an inventive step. It also upheld the three auxiliary

claims requests filed in opposition with letter of 1 October 2012 and re-filed copies thereof with a further letter of 28 January 2015.

VII. The Appellant submitted in its letter of 7 January 2015 that the appeal was admissible and that *inter alia* claim 1 as granted lacked an inventive step. It also filed the following document in further support of its argumentation regarding inventive step:

D12: *Progress in Colloid & Polymer Science, vol. 83 (1990), pages 16 to 28*.

VIII. Oral proceedings before the Board were held on 6 February 2015.

IX. The Appellant requested that the decision under appeal be set aside and that the European patent No. 1 305 388 be revoked.

The Respondent requested that
- the appeal be rejected as inadmissible or
- that the appeal be dismissed, or, alternatively,
- that the patent be maintained in amended form on the basis of one of the sets of claims according to the 1st to 3rd auxiliary requests filed with the letter of 28 January 2015.

X. The arguments of the parties of relevance here can be summarised as follows:

The **Appellant** submitted in writing in particular that

- its statement of grounds indicated the reasons for which the decision under appeal was to be set aside and exposed the facts and evidence substantiating the

appeal; the appeal complied thus with the requirements of Rule 99(2) EPC and was admissible;

- the comparative tests D10/D10a were not apt to show that the choice of a liquid surface tension (LST) below 25 mN/m brings about an improvement of the cleaning efficiency with respect to that of a composition according to example 1 of D2; the claimed subject-matter thus lacked an inventive step already for this reason;

- since the LST feature of claim 1 did not contribute to the solution of the technical problem, it had to be disregarded in the evaluation of inventive step in accordance with the case law (reference was made in this context to the reasons of T 285/91 of 15 June 1993);

- moreover, in line with established jurisprudence, the arbitrary combination of features selected from alternatives disclosed in D2 was not inventive in the absence of an unexpected technical effect arising from such a combination.

The **Appellant** submitted additionally at the oral proceedings before the Board, in particular, that

- the technical problem underlying the invention could only be seen in the provision of an alternative hard surface cleaning composition having good cleaning efficiency against cooked-, baked- or burnt-on soils;

- starting from the composition of example 1 of document D2 as closest prior art, it would have been obvious for the skilled person, in the light of the teaching of D2 itself, to try a similar composition

comprising, for example, a myristyl amine oxide instead of a lauryl amine oxide, the former being known from D12 to provide a greater reduction of the LST than the latter; or to try a composition containing greater amounts of DOWANOL® PnB, a low water-soluble propylene glycol n-butyl ether, which was also known to reduce LST; since the LST of the composition of example 1, as shown in the data submitted with the statement of grounds, was 25.38±0.01 mN/m, i.e. very close to the LST upper limit of claim 1 at issue, the skilled person, by modifying the composition of example 1 in the way explained above would have arrived at a composition having an LST below 25 mN/m;

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

The **Respondent** maintained during oral proceedings its view concerning the admissibility of the appeal already expressed in writing, i.e. that "*...the Appellant agrees with the opinion of the opposition division in that the invention of the patent is an alternative. The appellant does not dispute the conclusion of the Opposition Division that the subject-matter of claim 1 is a non-obvious alternative to the disclosure of the prior art and therefore is inventive. As such, the Appellant fails to indicate the reasons for setting aside the decision of the Opposition Division and the appeal should be rejected in view of Rule 101 EPC*".

As regards inventive step the **Respondent** maintained that

- the experiments D10/D10a showed a clear improvement of the cleaning efficiency linked to a reduction of the LST to a value below 25 mN/m;

- however, even accepting for the sake of argument that the technical problem underlying the invention, starting from example 1 of D2, consisted only in the provision of an alternative hard surface cleaning composition having good cleaning efficiency against cooked-, baked- or burnt-on soils, document D2 did not contain any hint prompting the skilled person to try a composition having a specific LST and did not suggest how to provide such a composition;

- moreover, in the attempt to provide an alternative composition, the skilled person would not have replaced the lauryl amine oxide used in example 1 with the less preferred myristyl amine oxide and would have rather modified the composition of example 1 as shown, for example, in example 4, by adding additional components useful for the cleaning effect;

- furthermore, there was no evidence that even modifying the composition of example 1 of D2 in the way suggested by the Appellant, the final composition would have an LST below 25 mN/m;

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

Reasons for the Decision

Admissibility of the appeal

1. Rule 99(2) EPC stipulates that "*In the statement of the grounds of appeal the appellant shall indicate the reasons for setting aside the decision impugned, or the extent to which it is to be amended, and the facts and*

evidence on which the appeal is based."

1.1 In its statement setting out of the grounds of appeal the Appellant indicated the reasons for which it considered that the subject-matter of claim 1 as granted did not involve an inventive step over the cited prior art, arguing essentially that no technical effect had been shown. Therefore, in its view, the decision under appeal had to be set aside.

1.2 As pointed out by the Respondent, the Appellant did not directly respond to the reasoning given in the decision under appeal regarding the obviousness of the claimed composition, which was considered as a mere alternative by the Opposition Division.

As regards the admissibility of the appeal, this is, however, not required. According to constant case law of the Boards of Appeal, for the appeal to be admissible, the statement of grounds must explain for which reason the appellant disagrees with the contested decision or part of it. Such explanations have to be clear in order to enable the board to understand immediately the scope of the appeal and why the decision is considered to be incorrect (see, for example, T 220/83 of 14 January 1986, OJ 1986, 249, headnote and reasons points 4 and 5). For the Board, these requirements are fulfilled in the present case.

In fact, in the present case the statement of grounds is limited to the issue of inventive step, in particular to the argument that the only distinguishing feature, namely the LST value below 25 mN/n, had no technical effect (see point X above). Whether this argument is convincing in the light of the evidence submitted is irrelevant as regards the admissibility of

the appeal, since it regards the merits of the objection raised.

Hence, said lack of a direct response to the reasoning of the Opposition Division in its decision is not prejudicial, in the present case, to the admissibility of the appeal.

1.3 The Board is thus satisfied that the requirements of Article 108 and Rule 99(2) EPC are met and that the appeal is, therefore, admissible.

Admissibility of evidence filed in the appeal procedure

2. The Respondent did not object to the late filing of the further experimental data and of documents D11 and D12 by the Appellant, and took position on their relevance.

2.1 These new items of evidence were filed in reaction to the reasoning given in the contested decision and in the Respondent's written submission and further corroborate the Appellant's initial objection regarding lack of inventive step. Their filing did not raise additional complex issues.

2.2 Therefore, the Board decided to admit said new experimental data and documents D11 and D12 into the proceedings (Article 114(2) EPC and Articles 12 and 13 RPBA).

Inventive step - Claims as granted

3. The invention

3.1 The invention (see paragraph [0001] and claim 1 of the paten in suit) concerns a hard surface cleaning

composition of alkaline pH, suitable for the removal of cooked-, baked- or burnt-on soils from cookware and tableware, which composition comprises a soil swelling agent and a spreading auxiliary.

3.2 According to the patent in suit, a "*soil swelling agent*" is "*a substance or composition effective in swelling cooked-, baked- or burnt-on soils*", for example an organoamine solvent (see paragraph [0046]), and a "*spreading auxiliary*" is "*a substance or composition having surface tension lowering properties*", like surfactants and organic solvents (see paragraph [0047]).

3.3 As explained in the description of the patent in suit (paragraphs [0003] and [0004]), cleaning compositions for removing these types of soil were known,
"... *however, none of the art has been found to be very effective in removing baked-on, polymerized soil from metal and other substrates.*
Thus, there is still need for cleaning compositions and methods used prior to the washing process of tableware and cookware soiled with cooked-on, baked-on or burnt-on food in order to facilitate the removal of these difficult food residues."

4. Closest prior art

4.1 Document D2 concerns (see column 1, lines 11 to 14) "hard surface cleaning compositions which are particular useful in the cleaning of hardened or baked-on greasy soils on hard surfaces."

More particularly, the composition of example 1 of D2 (see Tables 1 and 2) comprises
- 3.0% by weight of monoethanolamine, i.e. a soil

swelling agent within the meaning of the patent in suit (see e.g. paragraph [0026]), as well as
- 0.6% by weight of lauryl dimethyl amine oxide and 3.0% by weight of the "low water soluble" glycol ether "DOWANOL® PnB", i.e. spreading auxiliaries within the meaning of the patent in suit (see e.g. page 3, lines 47 to 48; paragraph [0019] on page 4 and page 5, lines 46 to 48 and 58) and has
- an alkaline pH as required by claim 1 at issue (see the test reported in document D6, item 3, and the data reported in the Appellant's statement of grounds).
This was not in dispute.

4.2 D2 addresses the same problems as the patent in suit, and the composition described in example 1 of D2 is very similar to the one according to the invention in terms of type and amounts of components and pH. Hence for the Board, the composition of Example 1 of D2 represents the most appropriate starting point for the evaluation of inventive step. This was also common ground between the parties.

5. Technical problem

5.1 The Appellant submitted that the comparative tests D10/D10a filed by the Respondent did not show that the lowering of the LST to a value below 25 mN/m brought about an improvement in terms of the cleaning efficiency with respect to the cited prior art. In this connection, it referred also to its newly filed experimental data and D11.

5.2 Therefore, it held that the technical problem underlying the invention could only be seen in the provision of an alternative hard surface cleaning

composition having good cleaning efficiency with respect to cooked-, baked- and burnt-on soils.

5.3 The following reasoning of the Board is based on the acceptance of this formulation of the technical problem, for the sake of argument only but in the Appellant's favour.

6. The solution

As the solution to the technical problem stated under point 5.2 *supra*, the patent in suit proposes the hard surface cleaning composition according to claim 1 at issue which is characterised in particular in that it comprises:
"a soil swelling agent and a spreading auxiliary" and in that it has "*a liquid surface tension of less than about 25 mN/m and a pH as measured in a 10% solution in distilled water of at least 10.5 at 25°C.*"

7. Success of the solution

7.1 All the compositions according to the invention described in Examples 1 to 16 of the patent in suit (see Tables in section [0092] and paragraph [0093]) show good cleaning efficiency regarding cooked-, baked- and burnt-on soils (see paragraph [0092], last sentence). Composition A described in D10/D10a, which is undisputedly another composition according to claim 1 at issue, likewise gave such good results.

7.2 Therefore, the Board is satisfied that the technical problem stated under point 5.2 above is convincingly solved by compositions according to claim 1 at issue.

7.3 It remains thus to evaluate whether or not the skilled person, starting from the composition of example 1 of D2 and seeking to solve said technical problem, would, in the light of the state of the prior art and common general knowledge, arrive at a composition as claimed in an obvious manner.

8. Non-obviousness of the solution

8.1 It is undisputed that the closest prior art, represented by the composition of example 1 of D2 (see point 4.1 *supra*), differs from the subject-matter of claim 1 at issue only insofar as it has an LST value of **more than** 25 mN/m. Said composition has an LST value of 25.38±0.01 mN/m according to the data provided by the Appellant in its statement of grounds, which value lies outside the range of "*below 25 mN/m*" defined in claim 1.

8.2 The Appellant (see point X above), referring to decision T 285/91, submitted in writing that according to established jurisprudence claimed features which do not contribute causally to the solution of the technical problem of the invention should be disregarded in the evaluation of inventive step. Therefore, the only distinguishing feature of the invention, i.e. the LST value of less than 25 mN/m, not contributing to the solution of the technical problem of the invention, should be disregarded in the assessment of inventive step.

8.2.1 In the present case, it is, however, apparent that the LST feature of the claimed composition is directly influenced by, in particular, the specific spreading auxiliaries present, for example surfactants and solvents, and by their amounts. In fact, it is

undisputed that by modifying the type or amount of these essential components, the LST of the composition will also change.

8.2.2 Considering that the technical problem identified by the Appellant consists in the mere provision of an alternative hard surface cleaning composition having good cleaning efficiency against cooked-, baked- and burnt-on soils, for example one having different types or amounts of spreading auxiliaries, the Board does not accept that the LST of the composition, which is linked to the types and amounts of spreading auxiliaries present, does not contribute to the solution of the technical problem identified above, as submitted by the Appellant.

8.3 The Appellant also submitted in writing (see point X above) that the claimed subject-matter lacked an inventive step if only because it did not provide an improvement over the closest prior art.

8.3.1 The Board remarks that according to established jurisprudence (see, for example, T 355/97 of 5 July 2000, point 2.6 of the reasons), the finding that the claimed subject-matter does not provide an improvement over the closest prior art leads to the necessity of reformulating the technical problem underlying the claimed invention, as done by the Appellant in the present case (see points 5.1 and 5.2 above). However, the absence of an improvement over the closest prior art does not necessarily implies a lack of inventive step, since the subject-matter defined by the combination of features according to claim 1 may nevertheless be non-obvious in the light of the state of the art.

8.3.2 The Board notes in this respect that, as submitted in writing by the Appellant, according to the case law of the Boards, an arbitrary selection of a combination of features selected from alternatives disclosed in a prior art document may indeed not amount to an inventive step in the absence of an unexpected technical effect arising from such a combination.

8.3.3 However, this rationale cannot apply to the present case where the chosen combination and amount of spreading auxiliaries must be one which allows to reach a relatively low LST value, which must be lower than the specific value indicated in claim 1. Therefore, even assuming for the sake of argument that the claimed composition does not bring about an unexpected technical effect with respect to the composition of example 1 of D2, the claimed composition nevertheless requires a particular combination of components which cannot be considered to be arbitrary.

8.4 It is undisputed that document D2 does not contain any explicit teaching with respect to the LST of the compositions disclosed therein, let alone any hint that providing a composition with an LST < 0.25 mN/m could be of interest.

8.4.1 The Appellant nevertheless submitted that starting from the composition of example 1 of document D2, which had an LST of 25.38±0.01 mN/m, it would have been obvious for the skilled person, in the light of the teaching of D2 itself, to try a similar composition. According to the Appellant the skilled person could, for instance, try

i) a composition comprising a myristyl amine oxide instead of a lauryl amine oxide, the former being known

from D12 (table 1 on page 19) to provide a better reduction of the LST than the latter, or

ii) a composition containing greater amounts of the low water-soluble glycol ether solvent DOWANOL® PnB, which the Appellant alleged during oral proceedings to be an organic solvent known to be able to reduce LST.

The composition of example 1 modified in this way would, in the Appellant's view, certainly have an LST value of less than 25 mN/m as required by claim 1 at issue.

8.4.2 As regards modification i)

Myristyl amine oxide is indeed mentioned as a suitable amine oxide in column 3, line 16 of D2. The Board remarks, however, that the composition of example 1 of D2 represents a composition according to the preferred frame formulation outlined in the description (from column 6, line 55 to column 7, line 7) and that the description of D2 explicitly identifies lauryl amine oxide as a desirable amine oxide surfactant for this kind of formulation (column 7, lines 8 to 9).

Therefore, the Board finds that the teaching of document D2 certainly would not induce the skilled person to replace in the preferred composition of example 1 the preferred lauryl amine oxide surfactant with a less preferred one.

Moreover, even though the skilled person could envisage to incorporate a myristyl amine oxide into the composition of Example 1 and could expect in the light of D12 (table 1 on page 19) that myristyl amine oxide would lower the LST more than lauryl amine oxide, there

is no evidence on file showing that the simple replacement of the amount of lauryl amine oxide (0.6% by weight) used in the specific, multi-component composition of example 1 with a similar amount of myristyl amine oxide would necessarily result in a reduction of the LST value of the composition by at least 0.38 mN/m, i.e. that the composition so obtained would fall within the terms of claim 1 and have, in particular, an LST value of less than 25 mN/m.

8.4.3 As regards modification ii)

According to the preferred frame formulation reported in the passage bridging columns 6 and 7 of D2, the amount of the glycol ether solvent system comprising a low water-soluble and a high water-soluble glycol ether is in the range of 5 to 7% by weight and the two glycol ethers are present at a ratio of 0.5:1 to 1.5.1. Therefore, the skilled person, taking into account this frame formulation requiring a maximum amount of 7% by weight for the glycol ether system, could envisage to use in the composition of example 1 a greater amount of the low water-soluble DOWANOL® PnB (present in the amount of 3% by weight), up to a ratio of 1.5:1 with respect to the high water-soluble glycol ether DOWANOL® DPM, contained in this example in an amount of 3.7% by weight. This modification of the composition of example 1 could result, for example, in a mixture comprising 4% DOWANOL® PnB and 3% DOWANOL® DPM.

However, also in this case, there is no evidence on file that such a modification of the composition of example 1 would necessarily result in a reduction of the LST value of the composition by at least 0.38 mN/m, i.e. in a composition according to claim 1 at issue having an LST below 25 mN/m.

8.4.4 Furthermore, as submitted by the Respondent, a skilled person seeking to solve the stated technical problem, would primarily be motivated by the teaching of document D2 to modify the composition of example 1 in a way suggested by the specific compositions of the other examples 2 to 4 disclosed therein, i.e. by adding further components apparently not necessarily having any influence on the LST of the composition.

8.5 The Board thus concludes that D2 itself does not contain any teaching that would induce the skilled person, taking into account common general knowledge, to modify the hard surface cleaning composition of Example 1 of D2 in a way leading to a composition having the combination of features of claim 1 at issue. Therefore, although the skilled person could in theory arrive at such a subject-matter by varying example 1 of D2 within the framework of the total disclosure of this document, the Board is not convinced that he would have done so without the benefit of hindsight.

8.6 Hence, in the Board's judgment, the subject-matter of claim 1 and, consequently, the subject-matters of claims 2 to 18 dependent thereon, involve an inventive step (Article 52(1) and 56 EPC).

9. Conclusion

The ground under Article 100(a) EPC invoked by the Appellant (lack of inventive step) does not prejudice the maintenance of the patent as granted.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Magliano B. Czech

Decision electronically authenticated