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D E C I S I O N
of 27 September 2002

Case Number: T 0745/98 - 3.3.6

Application Number: 92201089.7

Publication Number: 0509608

IPC: C11D 1/86

Language of the proceedings: EN

Title of invention:

Light duty liquid detergent compositions

Patentee:

Colgate-Palmolive Company

Opponent:

Henkel Kommanditgesellschaft auf Aktien

Headword:

Light duty liquid detergent/COLGATE

Relevant legal provisions:

EPC Art. 114(2), 54, 56

Keyword:

"Late filed evidence - not admitted"

"Novelty (yes)"

"Inventive step (no) - reformulation of the technical problem"

Decisions cited:

T 0715/95, T 1002/92

Catchword:

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Case Number: T 0745/98 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 27 September 2002

Appellant: Henkel
(Opponent) Kommanditgesellschaft auf Aktien
TFP / Patentabteilung
D-40191 Düsseldorf (DE)

Representative: -

Respondent: Colgate-Palmolive Company
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 27 May 1998
rejecting the opposition filed against European
patent No. 0 509 608 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: P. Krasa
Members: L. Li Voti
C. Rennie-Smith

Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division to reject the opposition and to maintain European patent No. 0 509 608 unamended.

Independent claim 1 reads as follows:

"1. A liquid dishwashing detergent composition providing stable foaming characteristics and which is mild to the hands and is effective in removing greasy soils, said composition comprising:

(A) a surfactant system comprising

(1) from 7.5 to 20% by weight, based on the total composition, of a salt of a C₁₀-C₁₆ linear alkyl benzene sulfonate anionic surfactant, said salt being selected from the group consisting of alkali metal salts, alkaline earth metal salts and mixtures thereof;

(2) from 0 to 8% by weight, based on the total composition, of anionic C₁₀-C₁₈ alkyl sulfosuccinate or sulfosuccinamate, wherein the alkyl group may be ethoxylated with up to 8 moles of ethylene oxide;

(3) from 8 to 20% by weight, based on the total composition, of anionic C₁₀-C₂₀ alkyl ether sulfate having from 1 to less than 3 moles ethylene oxide per mole of alkyl group; and

(4) from 3 to 12% by weight, based on the total composition, of an alkyl polyglucoside having from 12 to 16 carbon atoms, on average, in the alkyl chain, and an average degree of polymerization in the range of from 1 to 3;

(B) from 0.5 to 6% by weight, based on the total composition, of a foam stabilization system comprising

at least one lower alkanolamide of higher alkanolic acid;

the total weight of components (A) and (B) ranging from 25 to 54% by weight of the composition;

(C) up to 10% by weight, based on the total composition, of a low irritant organic solvent;

(D) up to 8% by weight of hydrotrope;

(E) up to 20% by weight, based on the total composition, in total of one or more optional additives chosen from chelating or sequestering agents, coloring agents, dyes, perfumes, bactericides, fungicides, preservatives, sunscreens, pH modifiers, pH buffering agents, opacifiers, antioxidants, thickeners, and proteins; and,

(F) balance, water."

Dependent claims 2 to 8 refer to specific embodiments of the liquid detergent composition of claim 1.

II. The Appellant (Opponent), in its notice of opposition, sought revocation of the patent inter alia on the grounds of Article 100(a) EPC and in particular because of an alleged lack of both novelty and inventive step of the claimed subject-matter.

The opposition was based inter alia upon the following documents:

(1): EP-B-070076

(3): EP-B-216301

III. In its decision, the Opposition Division found that the claimed subject-matter fulfilled the patentability requirements of the EPC.

In particular it held that the claimed subject-matter was novel over the cited prior art and that the skilled person would not find in the cited documents any hint to reduce the amount of the magnesium salt of alkyl benzene sulfonate and to increase that of alkyl ether sulfate in the specific composition of Example IIB of document (1) in order to solve the technical problem underlying the claimed invention, i.e. the provision of a liquid dishwashing composition mild to the skin, providing a stable foam and having good rinsability and effective greasy soil removal.

IV. An appeal was filed against this decision.

In the statement of the grounds of appeal the Appellant cited eight new documents (7) to (14), which had not been relied upon at first instance, and submitted an experimental report (15).

V. The Appellant submitted in writing and at the oral proceedings held before the Board on 27 September 2002, inter alia that:

- the claimed subject-matter lacked novelty in the light of the teaching of document (1);
- document (1) had already solved the technical problem underlying the patent in suit and disclosed in Example IIB a composition differing from the claimed subject-matter only insofar as it contained more alkyl benzene sulfonate and less alkyl ether sulfate;
- a routine optimization of the composition of Example IIB within the teaching of document (1)

would have led the skilled person to a composition according to the patent in suit.

VI. The Respondent and Patent Proprietor, which did not attend the oral proceedings, as announced in its letter of 30 August 2002, submitted in writing that:

- since the Appellant had failed to indicate why the late filed new documents (7) to (14) had to be considered highly relevant, they had to be dismissed;
- the claimed subject-matter was novel over document (1), which did not disclose all the features of claim 1 in combination;
- none of the cited documents was pertinent in regard to the technical problem underlying the claimed invention and there was no hint in the prior art which could have prompted the skilled person to modify composition IIB of document (1) by reducing the amount of the magnesium salt of alkyl benzene sulfonate and increasing that of alkyl ether sulfate;
- the Appellant's experimental report (15) confirmed the technical advantages obtained by means of the claimed composition;
- therefore, the claimed subject-matter involved an inventive step.

VII. The Appellant requested that the decision under appeal be set aside and that the patent be revoked.

The Respondent requested that the appeal be dismissed.

VIII. At the end of the oral proceedings, the chairman announced the decision of the Board.

Reasons for the Decision

1. *Procedural issues*

1.1 The Appellant has cited in the statement of the grounds of appeal eight new documents (7) to (14) and has filed therewith a new experimental report (15).

As explained by the Appellant during oral proceedings, documents (7) to (14) were filed in order to elucidate the common general knowledge at the priority date of the patent in suit; moreover, these documents and the experimental report (15) were intended to give further support to the arguments put forward against the inventiveness of the claimed subject-matter.

Moreover, the Respondent has argued as regards the experimental report (15) that it provides additional support for the increased performance of the claimed composition in respect to the composition IIB of document (1).

1.2 However, in the present case the granted claims were not amended during the proceedings at first instance; therefore, the Board finds that the Appellant had ample time during those proceedings to file such evidence and there were no circumstances which could excuse the delay in producing it.

The new evidence (7) to (15) must therefore in the Board's view be considered as late filed (see e.g. T 715/95, not published in the OJ EPO, point 3 of the reasons).

- 1.3 It is established case law that late filed evidence should only be admitted at the appeal stage if it can be considered at first sight to be more relevant than the evidence relied on at first instance and to be prejudicial to the maintenance of the patent (see, e.g. T 1002/92, OJ EPO 1995, 605, point 3.4 of the reasons).

From the Appellant's written statement read in combination with the specific passages of the cited documents (7) to (14) referred to therein, the Board finds that this newly cited evidence, addressing technical properties of the components of the claimed compositions which were already known from the prior art relied on at first instance, is not more relevant than that evidence.

Moreover, the experimental report (15), which should show, in the Appellant's intention, the performance of the composition of Example IIB of document (1) compared with similar compositions having varying concentrations of alkyl benzene sulfonate and alkyl ether sulfate, does not contain an exact reworking of such example IIB.

In fact, some of the surfactant components used differ from those used in document (1): e.g. the alkylnonyl polyglucoside (hereinafter identified as APG) surfactant has a degree of polymerisation (hereinafter identified as DP) of 1.4 and an alkyl chain length of 12 to 16 carbon atoms, whilst that used in Example IIB

has a DP of 1.7 and a chain length of 12 to 13 carbon atoms; the alkyl ether sulfate has a degree of ethoxylation of 2 and a chain length of 12 to 14 carbon atoms, whilst that used in Example IIB has a degree of ethoxylation of 0.8 and a chain length of 12 to 13; the fatty acid alkanolamide has a coconut alkyl rest, whilst that used in Example IIB has an alkyl rest having only 12 carbon atoms, i.e. a lauryl rest. Therefore, the tested composition does not represent that disclosed in document (1) and the test report (15) cannot support either the Appellant's or the Respondent's arguments.

Therefore, the Board concludes that the new cited evidence (7) to (15) should not be admitted into the proceedings (Article 114(2) EPC).

2. *Novelty*

Novelty of the subject-matter of claim 1 was contested by the Appellant on the basis of document (1).

However, as explained by the Respondent in its letter of 2 October 2000, various features disclosed in different parts of this document should be combined mosaically in order to arrive at the claimed subject-matter.

Therefore, the Board is convinced that this prior art document does not contain any disclosure of all the features of claim 1 in combination.

Since the appeal succeeds for other reasons given below, this need not to be dealt with in more detail.

3. *Inventive step*

3.1 Most reasonable starting point

3.1.1 The patent in suit, and in particular the subject-matter of claim 1, relates to a liquid dishwashing detergent composition, having utility with hand washing of dishware, comprising as essential components an alkali or alkaline earth metal salt of a C₁₀-C₁₆ linear alkyl benzene sulfonate anionic surfactant, an anionic C₁₀-C₂₀ alkyl ether sulfate having from 1 to less than 3 moles ethylene oxide per mole of alkyl group, an APG having from 12 to 16 carbon atoms, on average, in the alkyl chain and an average degree of polymerization in the range of from 1 to 3, a lower alkanolamide of higher alkanolic acid, which is, according to the description (page 6, lines 31 to 32), the reaction product of a lower alkanol of 2 or 3 carbon atoms with an alkanolic acid of 10 to 16 carbon atoms, all of them in amounts as specified in claim 1, and water. Minor optional amounts of a low irritant organic solvent, hydrotrope and additives can also be comprised (see page 2, line 7 and page 2, line 54 to page 3, line 21).

As explained in the patent in suit, it was considered desirable by consumers that light duty liquid detergent compositions provide a long lasting foam, have a good cleaning ability, especially in respect to greasy soils, and are as mild as possible to the skin. APG surfactants, for example, had already been suggested for improving the mildness of compositions of this type but were found to have poor foaming performance and rinsability (see page 2, lines 14 to 26 and 34 to 44).

The technical problem underlying the patent in suit was

thus defined in the patent in suit as the provision of a liquid dishwashing composition which is able to provide all the benefits mentioned above and also displays good rinsability (see page 2, lines 8 to 10 and 45 to 47).

- 3.1.2 Document (1) discloses liquid dishwashing compositions which comprise APG surfactants, an anionic cosurfactant system which is a mixture of alkyl benzene sulfonates and alkyl ether sulfates and a foam booster which can be a fatty acid alkanolamide as in the patent in suit; these compositions provide an exceptionally stable foam which can be readily rinsed and have superior grease/soil removal (see page 2, lines 23 to 61; page 4, lines 11 to 12, 31 to 32, 49 to 60; page 4, line 65 to page 5, line 16; page 5, lines 44 to 50).

Since the compositions of document (1) comprise an APG surfactant and an alkyl ether sulfate surfactant, which were both known at the priority date of the patent in suit to contribute positively to the mildness of light duty liquid detergent compositions comprising magnesium or alkyl benzene sulfonate surfactants (see patent in suit, page 2, lines 38 to 40 and document (3), page 2, lines 17 to 22), and since the patent in suit does not contain any qualitative or quantitative definition for identifying a degree of "acceptable" mildness, the Board concludes that, in the absence of any evidence to the contrary, the light duty liquid detergent compositions of document (1) should be considered as being acceptably mild to the skin.

- 3.1.3 In particular, a specific light duty liquid detergent composition, which is very close to those claimed in the patent in suit, is disclosed in Example IIB on

page 7 of document (1).

This composition comprises, by weight of the composition, 21.8% of an ammonium/magnesium C_{11.2} linear alkyl benzene sulfonate (thus presumably less than 21.8% of the magnesium salt), 5.8% of an ammonium C₁₂₋₁₃ alkyl polyethoxylate (0.8) sulfate, 3.8% of a C₁₂ fatty acid diethanolamide, 4.8% of a C₁₂₋₁₃ alkylpolyglucoside G_{1.7}, balance minors and water, wherein the amount of organic solvents is very low and hydrotropes are absent as indicated on page 5, lines 47 to 48.

The composition of Example IIB differs from the subject-matter of claim 1 of the patent in suit only insofar as it comprises 21.8% of magnesium alkyl benzene sulfonate (or somewhat less if it comprises some ammonium salt) and 5.8% of alkyl ether sulfate, whilst the patent in suit requires an upper limit of 20% for the alkyl benzene sulfonate and a lower limit of 8% for the alkyl ether sulfate.

Both parties have not disputed that these features are the only differences in regard to the claimed subject-matter.

It is to be further noted that the degree of ethoxylation of the alkyl ether sulfate of Example IIB is indicated as 0.8, whereas the lower limit for this value according to the patent in suit is 1. However, this difference is of no technical relevance taking into account that the numerical value for the degree of ethoxylation depend on the approximation used for its calculation.

3.1.4 Therefore, the Board finds that this specific composition of document (1), which already dealt with

and solved all the technical problems indicated in the patent in suit, is the most reasonable starting point for evaluating the inventive step of the claimed subject-matter.

The Board has nevertheless also examined all other cited documents and found them to be of minor importance since they deal only partially with the above-mentioned technical problems.

3.2 Reformulation of the technical problem

3.2.1 The Respondent has maintained that the compositions of the patent in suit have a technical advantage over the compositions of document (1).

However, the patent in suit contains comparative tests only in respect to a commercial composition such as Liquid Palmolive, which does not comprise APG surfactants, i.e. a composition not so close to the claimed subject-matter as the light duty liquid detergent compositions of document (1) comprising APG, for example that of Example IIB. Thus these tests are inappropriate to show any technical advantage over the composition of document (1).

3.2.2 Since the compositions disclosed in document (1), as explained in point 3.1.2 above, already solved all the technical problems mentioned in the patent in suit, the technical problem underlying the claimed invention has to be reformulated in less ambitious terms as the provision of an alternative liquid dishwashing composition having properties similar to those possessed by the composition of Example IIB of document (1).

The Board has no reason to doubt that the subject-matter of claim 1 solved the technical problem thus formulated.

3.3 Evaluation of inventive step

3.3.1 Document (1) teaches on page 5, lines 4 to 10 that the compositions should comprise, preferably, a cosurfactant consisting of 5 to 50% of alkyl benzene sulfonate and 5 to 50% of alkyl ether sulfate and therefore that the concentrations of these two surfactants may be varied within these limits; for example, the alkyl ether sulfate can be present in amounts greater than the alkyl benzene sulfonate. It was thus obvious for the skilled person, by following this teaching, to modify the specific composition of Example IIB by varying the cosurfactant concentrations within the limits of the range indicated in the description, for example, by using less than 20% of alkyl benzene sulfonate and more than 8% of alkyl ether sulfate (thus using concentrations of these surfactants within the limits of the patent in suit), and to expect a similar performance of the composition thus obtained.

3.3.2 The Board therefore concludes that the subject-matter of claim 1 of the patent in suit lacks an inventive step in the light of the teaching of document (1) and does not meet the requirements of Article 56 EPC.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The patent is revoked.

The Registrar:

The Chairman:

G. Rauh

P. Krasa