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D E C I S I O N
of 12 December 2003

Case Number: T 0711/01 - 3.3.6

Application Number: 91870187.1

Publication Number: 0503221

IPC: C11D 3/00

Language of the proceedings: EN

Title of invention:
Concentrated fabric softening compositions

Patentee:
THE PROCTER & GAMBLE COMPANY

Opponents:
Unilever PLC / Unilever NV
Henkel KGaA

Headword:
Concentrated softening compositions/PROCTER & GAMBLE

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no): combination of compounds obvious to try because of their known technical effect"

Decisions cited:
-

Catchword:
-

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Case Number: T 0711/01 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 12 December 2003

Appellant: (Opponent 02)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 15 May 2001 rejecting the opposition filed against European patent No. 0503221 pursuant to Article 102(2) EPC.**

Composition of the Board:

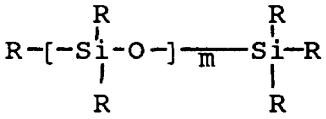
Chairman: P. Krasa
Members: L. Li Voti
U. J. Tronser

Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division to reject the oppositions against the European patent No. 0 503 221, relating to a concentrated fabric softening composition.

Claim 1 as granted reads as follows:

"1. A concentrated aqueous fabric softening composition comprising from 10 to 35% by weight of a cationic fabric softening active or mixtures thereof, from 0.3% to 3% by weight of the total composition of a linear fatty alcohol ethoxylate of the formula RO(Etox)n, wherein R is a linear C_8-C_{18} alkyl chain, and n representing the weighted average ethoxylation degree is of from 3 to 35, or mixtures thereof; characterised in that said composition further comprises: from 0.5% to 6% by weight of the total composition of a nonionic hydrophilic polymer, or mixtures thereof; from 0 to 2% by weight of the total composition of a highly branched fatty alcohol having from 8 to 18 carbon atoms, or mixtures thereof; from 0 to 0.5% by weight of the total composition of a linear or cyclic polydialkylsiloxane of the formula:



wherein R is a C_1-C_5 alkyl chain, and m is an integer of from 1 to 500, or mixtures thereof."

Dependent claims 2 to 13 relate to particular embodiments of the claimed product and claims 14 and 15 to a method for the softening of fabrics by means of such a product.

II. In their notices of opposition the two Opponents sought revocation of the patent *inter alia* on the grounds of Article 100(a) EPC, in particular for lack of novelty and inventive step of the claimed subject-matter.

The following documents were *inter alia* cited in support of the oppositions:

(1): GB-A-2134143

(2): GB-A-2053249

(3): EP-A-0309052

(7): EP-A-0043547

III. In its decision the Opposition Division found that the claimed subject-matter complied with the requirements of the EPC.

As regards inventive step it found in particular that:

– the prior art suggested that aqueous concentrated softening compositions comprising fatty alcohol ethoxylates were viscous, not dispersible in water and not pourable, whilst similar compositions comprising PEG instead of the fatty ethoxylate were pourable, dispersible in water and had a low

viscosity; therefore, these components had antagonistic properties;

– the cited prior art did not suggest the combined use of a fatty alcohol ethoxylate and a non-ionic hydrophilic polymer such as PEG, in the amounts required by the attacked claim 1, for providing a concentrated aqueous fabric softening composition having an acceptable viscosity and retaining an acceptable viscosity also after dilution;

– the skilled person would not have used a combination of these antagonistic components for solving the technical problem underlying the invention claimed in the patent in suit.

IV. An appeal was filed against this decision by the Opponent 02 (Appellant).

The Appellant submitted in the statement of the grounds of appeal and in the oral proceedings held before the Board on 12 December 2003 that the claimed subject-matter lacked an inventive step and it argued *inter alia* that:

– document (2) suggested the use of a nonionic hydrophilic polymer such as PEG for preparing an aqueous concentrated softening composition which was pourable and easily dosable and thus had an acceptable viscosity and was also water-soluble or water-dispersible and thus could be diluted with water;

– the compositions of document (2) could contain, additionally, viscosity modifiers;

– since the aqueous concentrated softening compositions of document (2) had an acceptable viscosity, the technical problem underlying the invention claimed in the patent in suit could only be seen in the preparation of an alternative aqueous concentrated softening composition having a controlled acceptable viscosity after dilution with water;

– document (1) taught the use of small amounts of a fatty alcohol ethoxylate as viscosity control agent in aqueous concentrated softening compositions for providing a controlled acceptable viscosity both in the concentrate and in the diluted composition;

– it was therefore obvious for the skilled person, starting from the teaching of document (2), to try a combination of PEG with small amounts of a fatty alcohol ethoxylate for providing an aqueous concentrated softening composition having a controlled viscosity also after dilution with water.

Novelty of the claimed subject-matter was no longer contested by the Appellant.

V. The Respondent and Patent Proprietor submitted in writing and in the oral proceedings "inter alia" that

– aqueous concentrated fabric softening compositions containing a fatty alcohol ethoxylate but not a non-ionic hydrophilic polymer and similar to that of example IV of document (3) had been found to have an acceptable viscosity in their concentrated form but a very low viscosity after dilution with water;

– this dramatic viscosity loss had been perceived as undesirable in consumers' tests;

– the patent in suit had overcome this drawback by using a combination of a fatty alcohol ethoxylate and a non-ionic hydrophilic polymer;

– both documents (2) and (7) described solvent based concentrates which formed a gel upon dilution with water and not aqueous concentrates as the patent in suit; these documents were thus not relevant for the evaluation of inventive step of the claimed subject-matter;

– furthermore, document (1), describing an aqueous concentrated fabric softening composition comprising a viscosity control agent selected from four different classes of compounds, e.g. a fatty alcohol ethoxylate, dealt with the different technical problem of providing aqueous softener concentrates having a prolonged stability upon storage;

– therefore, the prior art did not suggest the joint use of a non-ionic hydrophilic polymer and small amounts of a fatty alcohol ethoxylate for solving

the technical problem underlying the claimed invention.

VI. The Appellant requests that the decision under appeal be set aside and that the patent be revoked.

The Respondent requests that the appeal be dismissed and that the patent be maintained.

Reasons for the Decision

1. *Inventive step*

1.1 Since novelty of the subject-matter of the claims of the patent in suit was no longer contested by the Appellant, the only issue to be decided in the present case is whether or not this subject-matter involves an inventive step.

The patent in suit and, in particular, the subject-matter of claim 1, relates to an aqueous, concentrated fabric softener composition comprising specific amounts of a cationic fabric softening active, a linear fatty alcohol ethoxylate and a nonionic hydrophilic polymer, such as PEG (see page 2, lines 30 to 37 and point I above).

As explained in the patent in suit, aqueous concentrated fabric softening compositions are extremely viscous and the prior art already described means for controlling and decreasing their viscosity. It had been also observed that the viscosity of such compositions dropped dramatically upon dilution with

water and that such a viscosity loss was undesirable for consumers' acceptance (page 2, lines 10 to 16). Furthermore, the Respondent put forward that a composition similar to that of example IV of document (3) would have an unacceptable low viscosity after dilution with water (see point V above).

The technical problem underlying the patent in suit is therefore defined in the description of the patent in suit as the provision of a concentrated aqueous fabric softening composition which has an acceptable viscosity in the concentrated form and which retains acceptable viscosity after it has been diluted with water (page 2, lines 17 to 19).

As agreed by both parties, the ranges of viscosities reported on page 6, lines 11 to 15, represent the ranges of acceptable viscosities considered by the patent in suit.

1.2 As regards the alleged dramatic drop in viscosity mentioned above, the Appellant put forward that the Respondent did not bring any evidence in regard to the alleged undesirable viscosity loss of the composition of example IV of document (3) and that document (3) taught, conversely, that this composition could be used after dilution (page 15, line 57 to page 16, line 1).

In the Board's judgement the unsupported allegation that concentrated aqueous softening compositions, such as the composition of example IV of document (3), would undergo a dramatic viscosity loss upon dilution with water and would be regarded as undesirably thin by the consumer contradicts the teaching of the prior art, e.g.

that of document (3), already reported above, and the teaching of document (1), according to which this type of compositions can be prediluted with water before addition to the rinse liquor (page 1, lines 32 to 33 in combination with page 3, lines 8 to 9). Therefore, in the absence of any evidence, the alleged avoidance of a dramatic viscosity loss upon dilution with water is a technical effect to be disregarded when it comes to the definition of the technical problem to be solved by the claimed subject-matter.

1.3 Both parties have indicated in the oral proceedings documents (2) and (7) as the most suitable starting points for the evaluation of inventive step.

The Board notes that document (7), though relating in its broadest embodiment as represented in the claims also to aqueous softener compositions (page 2, lines 1 to 24 and claim 1), considers superfluous the presence of a high water content (page 1, lines 27 to 28) and it deals mainly with concentrated compositions based on organic solvents and containing very low amounts of water (page 1, lines 30 to 34; paragraph bridging pages 3 and 4 and page 5, lines 14 to 18 in combination with all the examples on pages 7 to 14) and with the avoidance of the jellification problems arising upon dilution with water of such compositions (page 1, lines 19 to 25; page 5, lines 26 to 29).

This document therefore does not qualify as starting point for evaluating inventive step.

Document (2), contrary to the Respondent's opinion (see point V above), does not relate to solvent based

compositions and instead deals with and solves successfully the technical problem of providing a concentrated aqueous fabric softening composition having an acceptable viscosity which can be used also after dilution with water; such a composition can be devoid of organic solvent or contain only minor amounts thereof as also allowed by the claims of the patent in suit (page 1, lines 54 to 61 and 86 to 91; page 2, lines 79 to 83).

Therefore, the Board considers document (2) as the most suitable starting point for evaluating inventive step.

1.4 Since the concentrated compositions of document (2) already had an acceptable viscosity within the meaning of the patent in suit, the technical problem underlying the claimed invention has to be seen, similarly to what is set out in the patent in suit, as the provision of an alternative composition which, upon dilution with water, maintains an acceptable viscosity (see point 1.1 above).

The Board has no doubt that the claimed subject-matter has successfully solved this technical problem.

1.5 The composition disclosed in document (2) comprises preferably 20 to 45% of a cationic softening agent and 4 to 25% of a nonionic hydrophilic polymer such as PEG, which components are thus comprised in ranges overlapping with those of the attacked claim 1 (see page 1, lines 97 to 100; page 2, lines 1 to 5 in combination with lines 44 to 46); the disclosed composition thus differs from the subject-matter of

claim 1 of the patent in suit only insofar as it does not comprise a fatty alcohol ethoxylate.

However, the concentrated compositions disclosed in document (2) can also comprise an additional viscosity control agent (page 2, lines 61 to 66).

Thus, it has to be investigated whether or not it was obvious for the skilled person to use a fatty alcohol ethoxylate as viscosity control agent in the compositions known from document (2).

1.6 It was known from document (1) that fatty alcohol ethoxylates can be used as viscosity control agents in small amounts not exceeding 4% by weight in aqueous concentrated softening compositions, which can also comprise PEG, i.e. a composition of the same type as disclosed in the patent in suit, and that the resulting compositions can be diluted with water before use (see page 1, lines 32 to 40 in combination with page 2, lines 38 to 42; page 3, lines 7 to 9 and lines 24 to 27; see also examples 22 and 23).

In view of this clear technical teaching, document (1), though being admittedly mainly concerned with the technical problem of providing aqueous softener concentrates having a prolonged stability upon storage (see page 1, lines 22 to 25), would have been nevertheless considered by the skilled person in trying to solve the above mentioned technical problem.

Therefore, the Board cannot agree with the Respondent that the skilled person would not have combined the teachings of documents (1) and (2).

Moreover, even though example 10 of document (2) (see page 4, lines 6 to 24) seems to suggest that fatty alcohol ethoxylates bring about an undesirable high viscosity in aqueous softening concentrates and that these fatty ethoxylates and PEG have antagonistic properties, as argued by the Respondent and in the decision of first instance (see point III above), this teaching applies to the use of amounts of fatty alcohol ethoxylate **above** 4% by weight of the composition and thus does not contradict the teaching of document (1) which explicitly warned against the undesirable thickening effect of such a viscosity control agent in an amount exceeding 4% by weight of the composition (see page 5, lines 24 to 30). On the contrary, in document (1), the use of lower amounts of fatty alcohol ethoxylates had been found to be useful for controlling the viscosity of the aqueous concentrates, as already explained above.

1.7 Consequently, the Board concludes that the fatty alcohol ethoxylates, used in small amounts of below 4% by weight of the composition, do not have antagonistic properties to the PEG and that the skilled person, faced with the technical problem of providing an alternative aqueous concentrated softening composition which, upon dilution with water, maintains an acceptable viscosity would have tried, in the light of the technical teaching of document (1), to use such small amounts of a fatty alcohol ethoxylate as viscosity control agent in combination with the PEG used in document (2) for controlling the viscosity of the diluted composition.

Therefore, the Board concludes that the subject-matter of claim 1 does not involve an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The European Patent No. 0 503 221 is revoked.

The Registrar: The Chairman:

G. Rauh P. Krasa