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D E C I S I O N
of 23 October 2001

Case Number: T 0807/97 - 3.3.6

Application Number: 88303212.0

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Language of the proceedings: EN

Title of invention:
Cleaning compositions

Patentee:
UNILEVER PLC, et al

Opponent:
Colgate-Palmolive Company

Headword:
Non-soap detergent active/UNILEVER

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no) - provision of a further detergent composition suggested in the prior art"

Decisions cited:
-

Catchword:
-



Case Number: T 0807/97 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 23 October 2001

Appellant:
(Proprietor of the patent)

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 13 June 1997
revoking European patent No. 0 287 300 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Krasa
Members: G. N. C. Raths
M. Tardo-Dino

Summary of Facts and Submissions

- I. This appeal is from the Opposition Division's decision revoking European patent No. 0 287 300 relating to cleaning compositions.

Claims 1 and 8 of the set of Claims 1 to 9 as granted read:

"1. A cleaning composition in solid form comprising:

- (a) a fatty acid soap in an amount which is at least 10 wt% of the composition,
- (b) a non-soap detergent active in an amount which is at least 5 wt% of the composition,
- (c) 1 to 20 wt% fatty acids, and,
- (d) at least 8% water,

wherein at least some of the said soap is in the delta phase.

8. A process for making a cleaning composition according to any of claims 1 to 7 comprising subjecting to high shear energy a mixture maintained at a temperature of less than 40°C and containing at least 10 wt% fatty acid soap, at least 5 wt% non-soap detergent active 1 to 20% fatty acids and sufficient moisture to ensure the generation of at least some soap in the delta phase."

- II. An opposition based on the grounds of Article 100(a) and (b) (lack of novelty, lack of inventive step and insufficiency of disclosure; Articles 54(1), (2), 56 and 83 EPC) was filed.

In the notice of opposition the following documents were submitted, inter alia:

- (2) J. Devidson, Soap manufacture, vol. I;
- (3) R.H.Ferguson, "Bailey's Industrial Oil and Fat Products", Industrial and Engineering Chemistry, 35, 1005, 4th edn., D.Swern, 1943, vol. I;
- (4) R.H.Ferguson et al., Industrial Chemical Engineering, 35, 1943;
- (5) GB-A-2 118 854;
- (8) R.S.Lee, Declaration under 37 C.F.R. 1.132 in the United States Patent and Trade Mark Office, 30 May 1990;
- (11) EP-A-0 176 330.

III. In its decision, the Opposition Division held that the subject-matter of the claims as granted was disclosed in a manner sufficiently clear and novel, but did not involve an inventive step, in particular, in view of document (5). The problem underlying the patent in suit in the light of document (5) was defined by the Opposition Division as to further improve the properties of soap compositions.

IV. An appeal was filed against this decision. The Appellants (Proprietors) argued in essence that the subject-matter was inventive, in particular over document (5).

V. The Appellants submitted in summary the following arguments:

- in the light of document (5) the problem underlying the patent in suit was to obtain beneficial mush and lather properties with soap compositions different from those of document (5);
- the Opposition Division had overlooked the warning in document (5) as to the amount of the non-soap detergent, which warning was corroborated by document (8);
- finally, it was not foreshadowed in the state of the art that the moisture contents of the soap compositions had to be modified for obtaining the desired delta phase in the presence of a non-soap detergent.

VI. The Respondent submitted in summary the following arguments:

- the problem underlying the patent in suit was to improve the properties of soap compositions as disclosed in document (5);
- the incorporation of non-soap detergent active was suggested by document (5) (page 2, lines 47 to 49);
- all the parameters promoting delta phase formation were known from documents (2), (3) and (4).

VII. The Appellants requested that the decision under appeal be set aside and the patent be maintained as granted (main request) or, alternatively on the basis of one of the auxiliary requests 1 to 5. The auxiliary requests 1 to 3 were the same as submitted with the letter of

23 January 1997 and amended during oral proceedings before the Opposition Division and were as follows:

Auxiliary request 1

The set of claims 1 to 8 of auxiliary request 1 differed from the set of claims 1 to 9 as granted in that

- in Claim 1
 - the amount "at least 10 wt%" under (a) was replaced by "between 20 and 80 wt%",
 - the amount "at least 5 wt%" under (b) was replaced by "between 10 and 60 wt%",
- Claim 3 was deleted and the remaining claims 4 to 9 were renumbered accordingly.

Auxiliary request 2

The set of claims 1 to 8 of auxiliary request 2 differed from the set of claims 1 to 8 of auxiliary request 1 in that in Claim 1 the passage", the amount of delta phase soap being such that the total intensity of the X-ray diffraction peaks at 19.50 degrees (4.55 Å), 23.00 degrees (3.86 Å) and 25.00 degrees (3.56 Å) each with a peak width of 0.7 degrees is at least 50/840 of the intensity of the strongest peak (2.09 Å) of a corundum standard" was added at the end of the claim after the word "phase".

Auxiliary request 3

The set of claims 1 to 9 of auxiliary request 3 differed from the set of claims 1 to 9 as granted in that the passage ", the amount of delta phase soap

being such that the total intensity of the X-ray diffraction peaks at 19.50 degrees (4.55 Å), 23.00 degrees (3.86 Å) and 25.00 degrees (3.56 Å) each with a peak width of 0.7 degrees is at least 50/840 of the intensity of the strongest peak (2.09 Å) of a corundum standard" was added at the end of the claim after the word "phase".

Auxiliary requests 4 and 5 were submitted with the Appellants' letter of 20 September 2001 and were as follows:

Auxiliary request 4

Auxiliary request 4 differs from auxiliary request 1 in that in Claim 1 the passage "and which is selected from C₈ to C₁₈ fatty acyl isethionates," was added after "composition," under b). Claim 2 was deleted and the other claims were renumbered.

Auxiliary request 5

Auxiliary request 5 differs from auxiliary request 2 in that in Claim 1 the passage "and which is selected from C₈ to C₁₈ fatty acyl isethionates," was added after "composition," under b). Claim 2 was deleted and the other claims were renumbered.

The Respondent requested that the appeal be dismissed.

IX. Oral proceedings took place on 23 October 2001.

Reasons for the Decision

1. Main request

1.1 Articles 84 and 123 EPC

The Board is satisfied that the subject-matter of claims 1 to 9 of the main request meet the requirements of Articles 84 and 123 EPC; as no objections were raised in this regard no further reasons need be given.

1.2 Novelty

The Board is satisfied that the subject-matter of claims 1 to 9 of the main request meet the requirements of Article 54 EPC; document (11) referred to by the Respondent during oral proceedings before the Board does not disclose a delta phase and does therefore not anticipate the subject-matter of Claim 1; as the main request fails for lack of inventive step no further reasons need be given.

1.3 Inventive step

1.3.1 The patent in suit concerns a cleaning composition comprising at least 10 weight % fatty acid soap, at least 5 weight % non-soap detergent active, 1 to 20 weight % fatty acid, at least 8 weight % water and at least some of the said soap is in the delta phase; the delta phase is obtained by a process comprising subjecting to high shear energy a mixture maintained at less than 40°C and containing the components as said above and sufficient moisture.

1.3.2 A specific problem was not explicitly indicated in the patent in suit. It results however from the description and from the results of table IV of the patent in suit

that the objective was to obtain a decrease in mush and an increase in lather (page 8, lines 1 to 4).

- 1.3.3 Such an objective was already disclosed in document (5) which the Board takes as the starting point for evaluating inventive step.

The Appellants argued that document (5) was not appropriate as starting point since the compositions of the patent in suit would belong to a different detergent system which contained a non-soap detergent whereas the exemplified compositions of document (5) did not contain a non-soap detergent.

The Board cannot agree. Document (5) relates to detergent bar processing; the teaching of this document was clear with respect to the properties the Appellants were looking for: the presence of the delta phase resulted in an improvement of lather and mush properties of superfatted material (page 1, line 24); improvements in these two properties could be obtained by phase changes induced by mechanical working (shear); in that cases superfatted soap bars contained an amount of 1 to 15% of free fatty acid; a level of above 5% free fatty acid was required to obtain the benefit when the moisture level was 8% to 12%. With amounts of tallow above 70% in a tallow/coconut charge, the free fatty acid was present at a level of 7.5%, more preferably above 10% (page 1, lines 26 to 33); the temperature of processing was in the range of 30 to 55°C (page 1, lines 42 and 43).

Further, document (5) allowed to add non-soap detergents. Because of its relevance for the present decision, the passage of document (5) directed to the addition of non-soap detergents is reproduced: "The soap feed stock may contain non-soap detergents in amounts which would not interfere with the desired

effect. Examples of these actives are alkane sulphonates, alcohol sulphates, alkyl benzene sulphonates, alkyl sulphates, acyl isethionates, olefin sulphonates and ethoxylated alcohols" (page 7, lines 47 to 49).

As to the moisture content, document (5) taught to use 8 to 12 weight % of water (page 1, lines 31 and 32) which amounts complied with the requirements of Claim 1 of the patent in suit.

- 1.3.4 For evaluating mush according to document (5), a soap tablet was immersed in distilled water at ambient temperature (Example VIII) or at 20°C (Example XIV) for 2 hours; the layer of mush on an area of 50 square cm was taken and weighed. Lather was said to be measured as the volume produced during hand washing, but quantitative measurements were not indicated. According to the patent in suit, quantitative measurements were made with respect to both mush and lather; the volume of lather produced and the weight of mush removed were recorded (see table IV).

The values in table IV of the patent in suit indicate that the delta phase appeared only at a moisture content of more than 11% and at a temperature of the cavity transfer mixer of 30 to 35°C (Examples 9 to 12); the delta phase did not appear when the temperature was below 30°C (Examples 7 and 8) and above 35°C (Example 13).

Further, in the patent in suit a comparison was made between the products of Examples 9 to 12 having a delta phase and the products of Examples 7, 8 and 13 displaying no delta phase which did however not represent the state of the art as represented by document (5). It is to be noted that there is almost no

difference between the properties of the invention Example 11 and the comparison Example 8.

Examples	mush	lather
	subjective evaluation (scraping from a 50 cm ² area) (g)	volume (cm ³)
8 (comparison)	6.2	56.3
11 (invention)	6.5	56.2

Since there was no clear effect of the invention composition over the comparison composition, the Appellants were asked during oral proceedings before the Board, whether the properties of the compositions of the patent in suit were superior to those of document (5); they argued that the objective was not an improvement of properties on those of document (5) but only the provision of different compositions having beneficial properties which could even be inferior to those of the composition of document (5).

Since the time a soap bar was left in water as well as the test temperature were not given in the patent in suit, a comparison between the results of document (5) and the patent in suit was not possible. This was not disputed by the Appellants.

In the light of the state of the art represented by document (5), the problem underlying the patent in suit can be reformulated as the provision of further cleaning compositions with about the same beneficial properties in respect to mush and lather formation.

- 1.3.5 In view of the Examples 9 to 12 of the patent in suit the Board is satisfied that the above mentioned problem was solved by the claimed subject-matter. This not being contested no further arguments are required.
- 1.3.6 It remains to be decided whether the provision of the compositions according to Claim 1, of which Examples 9 to 12 represent invention embodiments, involves an inventive step.
- 1.3.7 The compositions of Examples VIII and XIV of document (5) comprise, inter alia, a soap feedstock of 60% tallow and 40% coconut oil with 7.5% of the feed stock being present as free fatty acid, 10% moisture; in both cases the soap was passed through a device with the soap plodder; in other words: shear was applied; so, necessarily the delta phase appeared; the tablets produced of Example VIII had reduced mush and increased lather compared to a commercial product prepared by the same feed stock; the tablet of Example XIV had a value of 7.0 g for mush whereas the tablet of the correspondent commercial product gave 11.4 g of mush. The difference with respect to the subject-matter of Claim 1 of the patent in suit was that the non-soap detergent was missing in both examples.

However, as said above, according to document (5) "the soap feed stock may contain non-soap detergents in amounts which would not interfere with the desired effect."

The Appellants argued that this sentence was a warning to add a non-soap detergent. The passage would teach to keep the amounts of non-soap detergent small, in particular below 5 weight %.

1.3.8 In support of their argument based on an alleged prejudice, the Appellants relied on document (8) to prove that the addition of a non-soap detergent was detrimental to the generation of a delta phase, and, therefore, to both properties lather and mush.

It resulted from the test protocol of document (8), that at a concentration of 2.5 weight % of Fenopon (a non-soap detergent), the amount of delta phase started to diminish and at an amount of 10 weight %, it disappeared completely. The Appellant argued the skilled person was aware that the properties were a function of the amount of delta phase; realizing that the properties were worsening, he would have refrained from adding more non-soap detergent.

The Board cannot agree.

The test protocol of document (8) does not quantify the amount of delta phase. Therefore said protocol does not answer the question which minimum amount of delta phase starts generating effects.

When the passage of document (5) (see 1.3.3 above) regarding the addition of a non-soap detergent is read giving the words the technical meaning they have, it leaves no doubt as to its interpretation. The Appellants' interpretation that the sentence amounts to a warning, let alone a prejudice, involves an unacceptable desideratum.

For the Board, the passage teaches that the skilled person can increase the non-soap detergent as long as he obtains the desired effects, which are, in this case, much lather and a low amount of mush. Monitoring these properties did not pose a problem, and, hence, neither did the amounts of non-soap detergent to be added.

Hence, the state of the art offered the skilled person sufficient guidance to solve the existing technical problem; if the skilled person followed the teaching of document (5), he would have arrived at the compositions of Claim 1 of the patent in suit.

1.3.9 Therefore, the subject-matter of Claim 1 does not involve an inventive step. Claim 1 does not comply with the requirements of Articles 52(1) and 56 EPC; the main request must fail.

2. *Auxiliary requests to 1 to 5*

2.1 Amendments (Article 123 EPC)

The amendments find their support in the application as originally filed (page 7, line 27 and line 30) (auxiliary request 1), (page 4, lines 6 to 17) (auxiliary requests 2 and 3), (page 5, lines 30 to 32) (auxiliary requests 4 and 5).

Therefore, the requirements of Article 123 EPC are met.

2.2 Novelty

The Board is satisfied that the subject-matter of the claims of the respective auxiliary requests 1 to 5 meet the requirements of Article 54 EPC; as these requests fail for lack of inventive step no further reasons need be given.

2.3 Inventive step

2.3.1 Auxiliary request 1

No particular effect was linked to the range of "between 10 and 60 wt%" for the non-soap detergent which was rendered obvious by the concentration of the

non-soap detergent active of "at least 5 wt%"; the concentrations of "between 10 and 60 wt%" were already implicitly included in the main request. Improvements of properties were not at stake, and no particular effects were due to this specific range.

Therefore, the same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 1.

2.3.2 Auxiliary request 2

It is true that the crystallographic characteristics allow to conclude on the presence of a delta phase, but they do not have a technical contribution. Thus, they are irrelevant for the purpose of evaluating inventive step.

The same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 2.

2.3.3 Auxiliary request 3

Claim 1 of auxiliary request 3 is a combination of Claim 1 of the main request and the additional indication of the presence of the delta phase on which it was already commented under point 2.3.2.

Consequently the same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 3.

2.3.4 Auxiliary request 4

The specification of the non-soap detergent active cannot render inventive the claimed subject-matter since no effect was demonstrated for this known non-soap detergent which, there, results from an arbitrary

selection of the range of known non-soap detergents which were available to the skilled person. Therefore the same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 4.

2.3.5 Auxiliary request 5

The specification of the non-soap detergent active and of the amount of delta phase are of no importance since the Appellants did not assert any particular effects to be linked to these features.

Thus, the same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 5.

2.4 It follows that none of the Appellants' requests comprise a Claim 1 directed to subject-matter involving an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

P. Krasa

non-soap detergent active of "at least 5 wt%"; the concentrations of "between 10 and 60 wt%" were already implicitly included in the main request. Improvements of properties were not at stake, and no particular effects were due to this specific range.

Therefore, the same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 1.

2.3.2 Auxiliary request 2

It is true that the crystallographic characteristics allow to conclude on the presence of a delta phase, but they do not have a technical contribution. Thus, they are irrelevant for the purpose of evaluating inventive step.

The same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 2.

2.3.3 Auxiliary request 3

Claim 1 of auxiliary request 3 is a combination of Claim 1 of the main request and the additional indication of the presence of the delta phase on which it was already commented under point 2.3.2.

Consequently the same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 3.

2.3.4 Auxiliary request 4

The specification of the non-soap detergent active cannot render inventive the claimed subject-matter since no effect was demonstrated for this known non-soap detergent which, there, results from an arbitrary

selection of the range of known non-soap detergents which were available to the skilled person. Therefore the same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 4.

2.3.5 Auxiliary request 5

The specification of the non-soap detergent active and of the amount of delta phase are of no importance since the Appellants did not assert any particular effects to be linked to these features.

Thus, the same conclusions as drawn for Claim 1 of the main request apply mutatis mutandis to Claim 1 of auxiliary request 5.

2.4 It follows that none of the Appellants' requests comprise a Claim 1 directed to subject-matter involving an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:



G. Rauh

The Chairman:



P. Krasa