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Datasheet for the decision of 8 January 2018

Case Number: T 1849/14 - 3.3.06

Application Number: 07754834.5

Publication Number: 2004785

IPC: C11D1/00

Language of the proceedings: EN

Title of invention:
LIQUID LAUNDRY DETERGENTS CONTAINING CATIONIC HYDROXYETHYL CELLULOSE POLYMER

Patent Proprietor:
The Procter & Gamble Company

Opponents:
1) Henkel AG & Co. KGaA
2) Unilever PLC / Unilever N.V.

Headword:

Relevant legal provisions:
EPC Art. 52(1), 56

Keyword:
Inventive step - (no) - obvious solution - All claim requests

Decisions cited:

Catchword:

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Case Number: T 1849/14 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 8 January 2018

Appellant: (Patent Proprietor)	The Procter & Gamble Company One Procter & Gamble Plaza Cincinnati, OH 45202 (US)
Representative:	Russell, Tim Venner Shipley LLP 200 Aldersgate London EC1A 4HD (GB)
Respondent I: (Opponent 1)	Henkel AG & Co. KGaA Henkelstrasse 67 40589 Düsseldorf (DE)
Representative:	Henkel AG & Co. KGaA CLI Patents Z01 40191 Düsseldorf (DE)
Respondent II: (Opponent 2)	Unilever PLC / Unilever N.V. Port Sunlight / Weena 455 Wirral, Merseyside CH62 42D / 3013 AL Rotterdam (GB)
Representative:	McHugh, Paul Edward Patent Department Unilever R&D Colworth Laboratory Sharnbrook Bedford MK44 1LQ (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 4 July 2014 revoking European patent No. 2004785 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	B. Czech
Members:	G. Santavicca
	C. Heath

Summary of Facts and Submissions

I. The appeal lies from the decision of the Opposition Division to revoke European patent n° 2 004 785.

II. Claim 1 of the patent in suit reads as follows:

"*1. An aqueous liquid laundry detergent composition useful for cleaning fabrics wherein the composition comprises:*
a) from 0.05 to 0.4%, preferably from 0.1% to 0.3%, more preferably from 0.15% to 0.2%, by weight of the composition, of a cationic hydroxyethyl cellulose polymer having a degree of substitution of the cationic charge of from 0.01 to 0.20, preferably from 0.01 to 0.1, more preferably from 0.01 to Less [sic] *than 0.1;*
b) from 5% to 30% preferably from 7% to 15%, by weight of the composition of a surfactant comprising at least one anionic surfactants [sic] *and at least one nonionic surfactants* [sic]*; and*
c) from 2.5% to 7%, by weight of the composition, of fatty acid."

III. Two oppositions had been filed against the patent in suit, on the grounds of lack of novelty and inventive step (Article 100(a) EPC), and insufficiency of the disclosure (Article 100(b) EPC).

The items of evidence relied upon include the following documents:

D4: WO 2004/069979 A2;
D5: WO 2004/022685 A1;
D9: Experimental Data of the Patent Proprietor filed with letter dated 4 January 2011;
D13: Experimental Data filed by Opponent 2 with letter dated 25 February 2014.

IV. In the decision under appeal, the Opposition Division found that none of the four then pending claim requests met the requirements of the EPC and revoked the patent.

The subject-matter of Claim 1 according to the Second Auxiliary Request was found to be obvious in the light of the closest prior art (D5, not D4, was taken as the closest prior art).

V. Claim 1 according to said Second Auxiliary Request differs from Claim 1 as granted (wording under II, *supra*) only in that the relative amount of component (a) in the composition is more limited. It reads (amendment made apparent by the Board):

"1. An aqueous liquid laundry detergent composition ... wherein the composition comprises:
(a) ... ~~from 0.05 to 0.4%, preferably~~ from 0.1% to 0.3% ... of a cationic hydroxyethyl cellulose polymer having ..."".

VI. In its statement setting out the grounds of appeal, the Appellant (Patent Proprietor) defended the patent in the amended version according to this Second Auxiliary Request. It contested the finding of the Opposition Division regarding lack of inventive step, referring *inter alia* to the a newly filed "Technical Report 2".

VII. In their respective replies, Respondent I (Opponent 1) and Respondent II (Opponent 2) both maintained that the claimed subject-matter did not involve an inventive step, according to Respondent II also in view of D4 taken as the closest prior art. They both filed further items of evidence to support their positions.

VIII. The parties were summoned to oral proceedings, and in a communication issued in preparation therefor, the Board expressed its provisional opinion regarding *inter alia* inventive step, namely that the subject-matter of Claim 1 appeared to be obvious in the light of D4 taken alone.

IX. In a further letter dated 8 December 2017, Respondent I complemented its argumentation, *inter alia* regarding the lack of inventive step in the light of D4.

X. With a further letter of 8 December 2017, the Appellant submitted two sets of further amended claims as Auxiliary Requests 1 and 2.

The set of claims according to Auxiliary Request 1 only differs from the set of claims of the Main Request in that it does not contain dependent Claim 9 as granted.

Auxiliary Request 2 differs from Auxiliary Request 1 in that, in Claim 1, the fatty component (c) of the composition is specified to be (amendment made apparent by the Board) a "*fatty acid* ***containing 12 to 18 carbon atoms***".

The Appellant maintained *inter alia* that the claimed subject-matter was not obvious, not even when the technical problem were merely seen in the provision of a further laundry composition.

XI. Oral proceedings were held on 8 January 2018.

The debate focused on the issue of inventive step in the light of D4 (Formulation 32), considered as the closest prior art.

XII. Requests

The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the claims according to the Main Request filed with the statement setting out the grounds of appeal or, in the alternative, on the basis of the claims according to one of Auxiliary Requests 1 and 2 filed with letter dated 8 December 2017.

Respondents I and II requested that the appeal be dismissed.

XIII. The arguments of the Appellant (Patent Proprietor) of relevance for the present decision can be summarised as follows:

Considering D4/Formulation 32 as the closest prior art, the experimental data filed in the appeal proceedings were of little relevance.
The technical problem solved over D4 could be seen in the provision of a further laundry detergent composition offering good cleaning along with softening benefits through the wash to textiles (as mentioned in paragraph [0027] of the patent in suit).
The level of fatty acids exemplified in D4 was higher than the upper limit prescribed by Claim 1 at issue. Hence, the question arose whether the person skilled in the art would find motivation in D4 to decrease the disclosed level of fatty acids.
There was, however, no teaching in D4 regarding suitable levels of fatty acid. Instead, D4 focused on the ratio between the amounts of cationic polymer and anionic surfactants, without drawing a distinction between anionic surfactants and fatty acids, which

ratio had to be as low as possible below 1:5. Reducing the level of fatty acids to below 8 wt.% would, however, increase said ratio, and thus would run counter to the teaching of D4. The allegation that in Formulation 32 the ratio in question was so low that there was room for reducing the fatty acids was based on hindsight. Formulation 32 was a specific example that the person skilled in the art would not modify without an express incentive. However, there was no such incentive in D4. In fact, nothing in D4 motivated the person skilled in the art to reduce the level of fatty acids in Formulation 32.

XIV. The relevant counter-arguments of the Respondents (Opponents) can be summarised as follows:

Taking D4 as the closest prior art, the technical problem, even if experimental evidence D9 and D13 on file was considered, consisted merely in providing a further laundry cleaning and softening composition. Lowering of the level of the fatty acids in the laundry composition of D4 towards the claimed lower levels was nothing more than the obvious optimization of the relevant formulation.
The ratio between cationic polymers and anionic surfactants (which, according to D4, included the salts of fatty acids), considered critical in D4, was so low in Formulation 32 of D4 (0.3 : 14, i.e. about 1 : >40), that the skilled person had ample room for reducing the level of fatty acids while still keeping the ratio of cationic polymer to anionic surfactants below 1:5. The person skilled in the art would thus not have hesitated to lower the level of fatty acids.
Therefore, the claimed composition was obvious in the light of D4.

Reasons for the Decision

Main Request - Lack of inventive step - Claim 1

1. The invention

1.1 The present invention (see paragraph [0001] of the patent, and Claim 1 at issue) concerns liquid laundry detergent compositions for the laundering of textiles (e.g. clothing, linens, fabric) comprising cationic hydroxyethyl celluloses.

1.2 In the description (paragraph [0004]), it is indicated "*that it has now surprisingly been discovered that such cationic polymers may in combination with surfactant and fatty acids provide fabric care benefits to laundered textiles, when included in selected aqueous liquid laundry detergent compositions*".

2. Closest prior art

2.1 At the oral proceedings before the Board, it was not in dispute that it was appropriate to consider D4 as the closest prior art in assessing inventive step, as indicated in the Board's communication.

2.2 Indeed, D4 concerned *inter alia* liquid detergent laundry compositions comprising all the ingredients of the composition according to Claim 1 at issue and providing an improved cleaning performance without negatively impacting softening (see Table 30 on page 82 and page 84, first paragraph).

2.3 More particularly, Formulation 32 described in D4 (see Table 30 on page 82 thereof) is an aqueous liquid

laundry detergent composition comprising (by weight of the composition; see also page 50, lines 2 to 4)
- 2.0% sodium xylene sulphonate (40%) (a hydrotrope),
- 0.3% "LR 400", i.e. a preferred cationic cellulose polymer according to both D4 and the patent in suit (paragraph [0036]);
- 6% alcohol ethoxylate (a nonionic surfactant),
- 6% by weight of alkylbenzenesulphonic acid (an anionic surfactant), and,
- **8 %** coconut oil fatty acid.

2.3.1 According to D4 (page 48, last paragraph, third sentence), the sodium xylene sulphonate component of the composition is considered as a hydrotrope. It is not in dispute that, therefore, this component does not count as anionic surfactant.

2.3.2 The indication in D4 (paragraph bridging pages 13 and 14, in particular page 13, last two complete sentences) that "it is especially preferred to use a mixture of carboxylic acid salts with one or more **other anionic surfactants**" (emphasis added by the Board) implies that the neutralised fatty acids contained in composition 32 are to be considered as anionic surfactants.

2.3.3 Considering the total amount of anionic and nonionic surfactants contained in said composition, it is not in dispute that formulation 32 of D4 only differs from the compositions according to Claim 1 at issue in terms of its (higher) fatty acid content.

3. Technical problem

3.1 At oral proceedings before the Board, the Appellant expressly acknowledged that the experimental evidence on file was not supposed to, and could not, prove that

the compositions according to Claim 1 of the Main Request were improved compared to the compositions of D4.

3.2 Accordingly, referring to paragraph [0027] of the patent in suit, the Appellant considered that the technical problem solved in the light of the closest prior art (D4) consisted in the provision of a further liquid laundry detergent composition "*offering good cleaning along with softening benefits through the wash to textiles*".

4. The solution

The patent in suit as amended according to the Main Request provides, as a solution to the technical problem posed, the "*aqueous liquid laundry detergent composition*" according to Claim 1 at issue, which is characterised in particular in that it comprises (emphasis added by the Board) only "*from **2.5 to 7%**, by weight of the composition*" of the "*fatty acid*" component (c).

5. The success of the solution

It is not in dispute that the technical problem posed is effectively solved by the claimed compositions. Considering, for instance, the data presented in experimental reports D9 and D13 filed during the opposition proceedings, the Board has no reason to take another stance in this respect.

6. Obviousness

6.1 The subject-matter of Claim 1 at issue only differs from formulation 32 of D4 in terms of its lower

concentration of fatty acid (an upper limit of 7% by weight according to Claim 1 at issue compared to the 8% by weight in formulation 32 of D4).

6.2 Hence, it remains to be assessed whether the person skilled in the art seeking to solve the technical problem posed would have obviously considered, without the benefit of hindsight, modifying the composition of D4/example 32 by reducing the relative amount of fatty acid contained therein towards a value of 7% by weight or less.

6.3 Although Fatty acid is a preferred component of the compositions according to D4 (Point 2.3.2, *supra*), a preferred **range** of fatty acid concentrations is not disclosed in D4 (see page 14, heading "Anionic surfactants", to page 15, line 3).

6.3.1 However, D4 clearly and consistently discloses a preferred minimum total amount of 5% of anionic surfactant components. Reference is made to

- page 3, last paragraph, and page 5, first paragraph: "more than about 5% of one or more anionic surfactants", and, more concretely, to
- the paragraph bridging pages 6 and 7: "in order to attain the desired level of softening, it is preferred that the composition contain greater than about 5% anionic surfactant."

The person skilled in the art reading D4 will thus understand that in order to obtain the aimed for softness benefits, anionic surfactants should generally present in a concentration of at least 5% in the compositions according to D4.

6.3.2 As already mentioned (Point 2.3.2, *supra*), fatty acids count as anionic surfactants according to D4. The total amount of anionic surfactants of at least 5% thus includes fatty acids encompassed therein. Within the meaning of the terms according to D4, Formulation 32 of D4 thus contains an amount of anionic surfactants corresponding to the 6% alkylbenzenesulphonic acid and 8% coconut oil fatty acid, i.e. about 14 wt.%.

6.4 D4 also discloses (page 28, first paragraph) an express preference as regards a (weight) ratio of cationic polymer to anionic surfactants in the composition of less than 1:5, or even less 1:10, the preferred relative amount of cationic polymer being preferably less than 2 or 1% by weight of the composition (same page/paragraph).

6.5 Hence, the Board holds that the skilled person starting from D4 and seeking to provide a further composition would have envisaged, as equally obvious solutions, various modifications of formulation 32 of D4 meeting the two criteria referred to *supra*, i.e.
- keeping the total relative amount of anionic surfactants (including fatty acids) at a level of ≥ 5% by weight; and
- keeping the weight ratio of cationic polymer to anionic surfactants at a value of < 1:5 or < 1:10.

6.6 Formulation 32 of D4 includes, in total, 6% alkylbenzenesulphonic acid and 8% coconut oil fatty acid, hence a relative amount (about 14% by weight) of anionic surfactants being almost three times greater than said minimum of 5% by weight.

Moreover, the weight ratio of cationic polymer LR 400 to anionic surfactants contained in Formulation 32 is

about 0.3:14, i.e. about 1:47, hence much lower than said preferred maximum ratio of 1:10.

6.7 For the person skilled in the art seeking to solve the technical problem posed, lowering the total relative amount of anionic surfactant in Formulation 32 and, correspondingly, the concentration of the fatty acid component comprised in the Formulation, e.g. from 8 to 7% or less, whilst still meeting the other two quantitative criteria referred to *supra*, would have been one out of many equally obvious possibilities of modifying said composition whilst remaining within the framework of the teaching of D4.

6.8 In the Board's judgement, the subject-matter of Claim 1 does not, therefore, involve an inventive step (Articles 52(1) and 56 EPC).

7. Consequently, the Main Request is not allowable.

Auxiliary Request 1 - lack of inventive step - claim 1

8. Claim 1 according to Auxiliary Request 1 is identical to Claim 1 according to the Main Request an is thus objectionable for the reasons set out under Points 2. to 6.9, *supra*.

9. Auxiliary Request 1 is thus not allowable.

Auxiliary Request 2 - lack of inventive step - claim 1

10. Claim 1 according to Auxiliary Request 2, compared to Claim 1 as granted, comprises the further limitation "*fatty acid containing 12 to 18 carbon atoms*".

10.1 Aware of the Board's view on the subject-matter of Claim 1 of the Main Request in respect of inventive step in the light of D4, the Appellant acknowledged that the experimental evidence on file could also not serve to show an improvement over the compositions of D4 as regards the composition of Claim 1 according to Auxiliary Request 2.

10.2 Considering that the closest prior art itself, i.e. formulation 32 of D4, comprises coconut oil fatty acid, which is undisputedly a mixture of fatty acids containing 12 to 18 carbon atoms, the incorporation of this additional feature into Claim 1 has no bearing on the above considerations of the Board regarding obviousness in the light of D4.

10.3 Hence, the subject-matter of Claim 1 according to Auxiliary Request 2 does not involve an inventive step either (Article 52(1) and 56 EPC).

11. Consequently, Auxiliary Request 2 is not allowable either.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Magliano B. Czech

Decision electronically authenticated