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Datasheet for the decision of 21 September 2018

Case Number: T 0526/15 - 3.3.06

Application Number: 10150161.7

Publication Number: 2354214

IPC: C11D1/72, C11D1/83, C11D3/42, C11D10/04

Language of the proceedings: EN

Title of invention:
Surfactant ratio in dye formulations

Patent Proprietor:
Unilever PLC
Unilever N.V.

Opponents:
The Procter & Gamble Company
Henkel AG & Co. KGaA

Headword:
Laundry domestic method/UNILEVER

Relevant legal provisions:
RPBA Art. 13(1), 13(3)
EPC Art. 84, 123(2), 56

This datasheet is not part of the Decision.
It can be changed at any time and without notice.

Keyword:
Late-filed request - justification for late filing (yes)
Amendments - added subject-matter (no)
Claims - clarity (yes)
Inventive step - non-obvious solution

Decisions cited:

Catchword:

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Case Number: T 0526/15 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 21 September 2018

Appellant I: (Opponent 1)	The Procter & Gamble Company One Procter & Gamble Plaza Cincinnatti, Ohio 45202 (US)
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Respondent: (Patent Proprietor)	Unilever PLC Unilever House 100 Victoria Embankment London EC4Y 0DY (GB)
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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted on 22 January 2015 maintaining European patent No. 2354214 in amended form**

Composition of the Board:

Chairman J.-M. Schwaller
Members: P. Ammendola
C. Brandt

Summary of Facts and Submissions

I. The present appeal by opponents 1 and 2 (hereinafter **appellants I and II**) is against the interlocutory decision of the opposition division to maintain European patent No. 2 354 214 in amended form on the basis of the then pending main request of the patent proprietor (hereinafter **respondent**).

II. The main request consisted of ten claims, with claim 1 reading:

"*1. A domestic method of treating a laundry textile, the method comprising the steps of:*
(i) treating a textile with an aqueous solution of 1 to 10g/L of a formulation;
(ii) optionally rinsing; and,
(iii) drying the textile, wherein the laundry detergent formulation comprises:
(i) from 0.0001 to 0.01 wt% of a blue or violet uncharged alkoxylated dye; and,
(ii) from 2 to 70 wt% of surfactant selected from anionic and non-ionic surfactants, wherein the weight ratio of anionic:non-ionic surfactant is from 50:50 to 0:100 and the non-ionic surfactant is an alkyl ethoxylate."

Dependent claims 2 to 10 defined preferred embodiments of the method of claim 1.

III. In their statements of grounds of appeal the appellants in particular raised objections under Article 56 EPC with reference *inter alia* to the following documents:

D11 = WO 2007/096068

D12 = WO 2006/045375

D16 = Technical report filed with appellant I's statement of grounds of appeal.

IV. The respondent submitted a first auxiliary request with a letter dated 30 September 2015 and four further auxiliary requests with a letter dated 31 May 2018.

V. Following a communication from the board, the respondent submitted auxiliary requests 6 and 7. In the communication, the board had *inter alia* expressed the following consideration in respect of the inventive step of above claim 1: "... it might be of relevance, in particular for the identification of the closest prior art and/or the technical problem credibly solved across the whole scope of claim 1 at issue over this prior art, to discuss if the skilled reader would understand the definition of the dye to necessarily imply that the claimed method concerns the treatment of synthetic garments only".

VI. In the course of the oral proceedings held on 21 September 2018, the respondent submitted two further auxiliary requests and, after having withdrawn all the pending requests, made an exception of the ninth auxiliary request, which it made its new main and sole request (hereinafter **main request**). The appellants disputed the main request's admissibility into the appeal proceedings, as well as the compliance of its claim 1 with the requirements of Articles 56, 84 and 123(2) EPC.

VII. The set of claims of the main request differs from the set that the opposition division found allowable (see

II, *supra*) only by the additional presence of the following wording at the end of claim 1:

", *wherein the textile is a synthetic garment which is a nylon and elastane synthetic garment.*"

VIII. Final requests

Appellants I and II requested that the decision under appeal be set aside and that the patent be revoked.

The respondent requested that the patent be maintained on the basis of the new main request filed at the oral proceedings.

Reasons for the Decision

Main request

1. Admissibility

1.1 In the appellants' opinion this request should not be admitted into the appeal proceedings because it was late-filed and was not clearly allowable in view of Articles 84 and 123(2) EPC.

1.2 The board however notes that:

(a) the filing of this request was manifestly also in reply to an issue that had been explicitly raised for the first time in these appeal proceedings in the board's communication (see V, *supra*);

(b) as explained below (see points 2 and 3) this main request appears clearly allowable in view of Articles 84 and 123(2) EPC;

(c) the set of claims of the main request differs from that considered in the decision under appeal only in that the treated laundry textile is a nylon and elastane synthetic garment. This indication limits the claimed subject-matter to the most preferred embodiment of the patented method (since the treatment of nylon and elastane is explicitly described as particularly advantageous in [0005] of the patent in suit, as also supported by data in the table in [0045]), and

(d) both appellants in their submissions regarding Article 56 EPC preceding the filing of the main request had focused on the teachings in the patent in suit in respect of the treatment of nylon and elastane synthetic garments; in particular D16, filed by appellant I with its statement of grounds, also reported data relating to the treatment of a nylon-elastane cloth.

1.3 Hence, in the board's conviction the filing of the main request at the oral proceedings was manifestly also in reply to the board's communication, and the nature of the amendment introduced is such that the appellants could be expected to deal with the amended claim request without adjournment of the hearing.

Accordingly, the board, exercising its discretion under Article 13(1) and (3) RPBA, has decided to admit the new main request into the proceedings.

2. Clarity of claim 1 (Article 84 EPC)

The appellants disputed the compliance of claim 1 at issue with the requirements of Article 84 EPC only because they considered the added expression *"wherein*

the textile is a synthetic garment which is a nylon and elastane synthetic garment" to be unclear.

2.1 In their opinion, this added wording did not clearly express whether it required "*nylon*" and "*elastane*" of the synthetic garment to be e.g. knitted together (i.e. as in the "*knitted nylon-elastane*" sample used for the test whose results are reported in the table at paragraph [0045] of the patent) or whether these two materials should be separately present (i.e. in different parts of the garment). Moreover, it was also not clear if "*synthetic garments*" also encompassed e.g. bed sheets made of synthetic fibres.

2.2 In the board's conviction, however, the use of the wording "*a nylon and elastane synthetic garment*", in the context of a claim directed to a domestic method for treating a laundry textile, appears to be manifestly in accordance with the language conventionally used for classifying garments in view of e.g. their domestic laundry treatment. Thus, it is immediately apparent that it clearly identifies any of those objects that are normally laundry-washed at home (and thus certainly also e.g. bed sheets) in which nylon and elastane are the materials forming the majority (by weight) of the object. Therefore, the wording recited above is construed by the skilled person as indicating a(ny) laundry textile exclusively or mostly made of "*nylon and elastane*".

The breadth of this definition does not render it unclear. In particular, no unclarity derives from the fact that it embraces both garments in which these two materials are e.g. "knitted" together and garments in which they are separately present in two distinct parts of the (same) garment.

2.3 The board therefore comes to the conclusion that the wording added at the end of claim 1 has a clear meaning. Thus, the appellants' objection in view of Article 84 EPC is found unconvincing.

3. Basis in the original application for the subject-matter of claim 1 (Article 123(2) EPC)

The appellants disputed the compliance of claim 1 at issue with the requirements of Article 123(2) EPC only because of the expression added at the end of the claim (see VII, *supra*).

3.1 In their opinion, the meaning of this wording was possibly different from that used in paragraph [0005] of the original patent application as published, which reads: "*The present invention provides shading formulation that provides a greater whiteness benefit to synthetic garments, particularly nylon and elastane.*"

According to the appellants this passage would disclose either "nylon synthetic garments" or "elastane synthetic garments".

3.2 In the board's conviction, however, the literal interpretation of paragraph [0005] is that both terms of the expression "*nylon* ***and*** *elastane*" (emphasis added by the board) are used to identify a single class/group of "*synthetic garments*". This interpretation is also consistent with the presence of both nylon and elastane in the only relevant textile specimen used in the washing tests whose results are reported in the table at [0044] of the original patent application.

3.3 As to the argument that "*nylon **and** elastane*" in [0005] would disclose either "nylon synthetic garments" or "elastane synthetic garments", this at most may represent a further possible meaning of [0005], in addition to the literal one discussed above, which however is not in contradiction with Article 123(2) EPC.

3.4 Thus, the appellants' objection that the expression added at the end of claim 1 at issue makes the claim contravene Article 123(2) EPC is also found unconvincing.

4. Inventive step (Article 56 EPC)

Applying the problem-solution approach, the board has come to the conclusion that the subject-matter of claim 1 at issue involves an inventive step for the following reasons:

4.1 The technical field of the opposed patent is that of laundry shading dye compositions. The patent in suit also focuses specifically on domestic methods of treating in particular nylon and elastane synthetic garments with laundry shading dye compositions (see "*SUMMARY OF THE INVENTION*").

4.2 Closest prior art

4.2.1 In the appellants' opinion, the subject-matter of claim 1 was obvious when starting from the prior art disclosed in either D11 or D12.

4.2.2 On the question of which document is the best starting point for assessing inventive step, the board notes that similarly to the claimed subject-matter, example 3

of D11 (which refers back to examples 1 and 2 thereof) likewise concerns the treatment of "nylon and elastane fabrics" with laundry compositions containing shading dyes.

Moreover, several surfactant mixtures used in said example 3 contain a non-ionic alkyl ethoxylated surfactant and an anionic surfactant at a 50:50 amount ratio (see also D11, Table 1.1) and a shading dye (the anthraquinone "Solvent Violet 13") that is undisputedly violet and uncharged, but NOT alkoxylated.

4.2.3 The subject-matter of claim 1 at issue thus differs from the process disclosed in this prior art only in that the dye used is alkoxylated.

4.2.4 The appellants' alternative approach, considering the closest prior art to be example 3 of D12, is found unconvincing, not only because this latter discloses the treatment of nylon only, but also because it uses formulations exclusively containing anionic surfactants. Hence, the subject-matter claimed in the present case also has more features in common with the prior art disclosed in D11 than with that disclosed in D12.

4.2.5 The board is therefore of the opinion that D11 represents the closest prior art.

4.3 As to the **technical problem** underlying the claimed invention, this is defined in the patent (see paragraph [0005]) as being to provide a "*greater whiteness benefit to synthetic garments, particularly nylon and elastane*".

4.4 The **proposed solution**, namely the method of treating a laundry textile according to claim 1 at issue, is in particular characterised in that:

- the textile is a nylon and elastane synthetic garment,
- the detergent comprises 0.0001 to 0.1 wt% of a blue or violet uncharged alkoxylated dye and from 2 to 70 wt% of anionic and non-ionic surfactants in an anionic:non-ionic surfactant weight ratio of from 50:50 to 0:100, and
- the non-ionic surfactant is an alkyl ethoxylate.

4.5 Success of the solution

4.5.1 On the question of whether or not the proposed solution solves the above problem, the experimental results reported in the table at [0045] of the patent in suit clearly show that, for a treated specimen of "*Nylon-elastane*", substantially increasing levels of whiteness (measured as "*Δb*") are achieved upon changing the weight ratio of anionic:non-ionic surfactant from 100:0 to 75:25, 50:50, 25:75 and 0:100. Hence, these data make it plausible that the proposed solution solves the technical problem mentioned in [0005], in the sense that it results in a maximisation of dye deposition onto nylon and elastane synthetic garments relative to the anionic:non-ionic surfactant weight ratio.

4.5.2 The appellants argued that D11 already solved the same problem as the one underlying the contested patent, since the detergent formulations used in D11, example 3, also provided "better whiteness" to nylon elastane fabrics, with the consequence that the problem had to be reformulated into an alternative.

4.5.3 The board is not convinced by this argument, because D11 is concerned with a different problem, namely the stabilisation of liquid detergent formulations containing shading dyes, the latter having the tendency to precipitate during storage (D11: page 2, line 10 to 15, and page 2, line 26, to page 3, line 2).

Moreover, D11 does not further qualify the level of whiteness (or of deposition of the shading dye) described in example 3, but merely states that "clear deposition of the dye to the fabrics was observed giving better whiteness". For the board, this statement only means that the fabrics were whiter than before the treatment.

Furthermore, it is not even apparent from any other passage of D11 that the level of whiteness achieved might vary (and how) when changing the anionic:non-ionic surfactant weight ratio.

4.5.4 The appellants asserted that D11 already achieved a "greater" dye deposition. Furthermore, they stressed that all the liquid laundry formulations disclosed therein, including those used in its example 3, showed a reduced precipitation of the dye upon storage. The improved stability of these formulations inevitably resulted in a particularly high deposition of the shading dye in domestic use.

4.5.5 This line of argument is found unconvincing by the board, because the achievement in D11 of about the same level of dye deposition independently of the time passing between preparation and use of the formulation is totally unrelated to the question of whether the same formulation (e.g. also immediately after its preparation) might or not be expected to have already

achieved a maximisation of dye deposition relative to the anionic:non-ionic surfactant weight ratio.

4.5.6 Hence the board, considering that:

- the dependence of the level of dye deposition on that ratio *per se* is not even indirectly mentioned in D11, and
- in the patent in suit this (apparently newly discovered) dependence is said to exist only for dyes that are different from that used in example 3 of D11,

finds that there is no reason that could possibly justify expecting that a relative maximisation of dye deposition has already been achieved in the experiments of this prior art (e.g. no reason for expecting that the methods of example 3 - in which the formulations used comprise 50:50 anionic:non-ionic surfactants - might achieve a level of dye deposition that is higher than that obtainable when using similar formulations with larger relative amounts of anionic surfactant).

4.5.7 On the contrary, as discussed above, the patent in suit provides the implicit teaching that a relative maximisation of dye deposition on nylon and elastane synthetic garments is actually achieved by the method of the invention, due to the selected anionic:non-ionic surfactant weight ratio.

4.5.8 The appellants argued that the technical problem was not plausibly solved across the whole breadth of claim 1 at stake.

For the board, this argument amounts to a generic and unsupported assertion, because the appellants merely stressed that the experiments reported in the table in

[0045] of the patent were based only on a specific dye and a specific pair of anionic and non-ionic surfactants and using a single specimen of nylon and elastane. They stated that the experimental data reported in the patent was insufficient to make plausible the achievement of a relative maximisation of dye deposition across the whole scope of claim 1 of the new main request, but without providing convincing experimental counter-evidence or sound theoretical reasons in support of their objection.

4.5.9 The appellants also relied on the experimental data provided with D16.

The board notes that these experiments cannot possibly make it implausible for a relative maximisation of dye deposition to occur across the whole scope of claim 1 at issue. The data therein do indeed refer to four compositions (with four different anionic:non-ionic surfactant weight ratios), but four different overall amounts of surfactants are used in them. Thus, these data cannot possibly provide any information as to whether or not the anionic:non-ionic surfactant weight ratio *per se* contributes - and if so how - to the observed levels of shading dye deposition.

4.5.10 The board therefore concludes that the method of claim 1 at issue credibly solves, vis-à-vis the closest prior art, the technical problem underlying the patent in suit as identified at 4.3, *supra*.

4.5.11 Regarding the contradictory statement in [0046] of the patent that higher deposition of the shading dye is observed for "*higher levels of anionic surfactants*", the board is of the opinion that the skilled person would immediately identify a manifest error in this

statement, since the data in the table of [0045] clearly show the opposite, i.e. that the level of deposition of the dye tested on the nylon and elastane specimen increases upon increasing the relative amount of non-ionic surfactant.

4.6 Non-obviousness of the proposed solution

4.6.1 In the present case the assessment of inventive step boils down to the question whether the skilled person, starting from one of the experiments in example 3 of D11 in which the surfactant mixture used to wash the nylon elastane fabric has an anionic:non-ionic surfactant weight ratio of 50:50, would have replaced the shading dye used with another blue or violet uncharged dye that also is alkoxylated, in the expectation that such a modification would have allowed him to achieve a relative maximisation of dye deposition.

4.6.2 The board notes that the appellants have not even alleged that the prior art already teaches that the deposition of shading dyes in general (let alone specifically the deposition on nylon and elastane garments of the alkoxylated dyes described in claim 1 at stake) is possibly dependent on the anionic:non-ionic surfactant weight ratio *per se*.

4.6.3 In particular, the board stresses that

- neither the undisputed fact that D11 (e.g. in claim 1) also discloses a general formula for the dye encompassing alkoxylated dyes,
- nor the other undisputed fact that a dye in accordance with the definition in present claim 1 is used e.g. in example 3 of D12 (where the

laundry formulation contains only an anionic surfactant) for providing whiteness to nylon, is in any way indicative that, when the dye is alkoxylated, a maximised level of dye deposition onto synthetic garments (let alone specifically onto nylon elastane synthetic garments) is obtainable by retaining the anionic:non-ionic surfactant weight ratio of from 50:50 (already present in the starting-point prior art) and/or by further increasing the relative amount of alkyl ethoxylate therein.

Hence, the appellants' line of argument that the claimed method was obvious in view of the combination of example 3 of D11 with either the general formula encompassing alkoxylated dyes in claim 1 of D11 itself or with e.g. example 3 of D12 is found unconvincing.

4.7 The board therefore concludes that the cited prior art does not render obvious the subject-matter of claim 1 at issue, which therefore involves an inventive step (Article 56 EPC).

5. The remaining claims 2 to 10 of the main request describe preferred embodiments of the method of claim 1. Hence their subject-matter involves an inventive step under Article 56 EPC for the same reasons as given above for claim 1.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of the set of claims according to the new main request (claims 1 to 10) as filed during the oral proceedings on 21 September 2018, and a description to be adapted thereto.

The Registrar: The Chairman:

D. Magliano J.-M. Schwaller

Decision electronically authenticated