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**Datasheet for the decision  
of 16 April 2020**

**Case Number:** T 0740/18 - 3.3.06

**Application Number:** 12707100.9

**Publication Number:** 2694635

**IPC:** C11D3/00, C11D3/37, C11D3/386

**Language of the proceedings:** EN

**Title of invention:**  
Method of laundering fabric

**Patent Proprietors:**  
Unilever PLC  
Unilever N.V.

**Opponents:**  
THE PROCTER & GAMBLE COMPANY  
Henkel AG & Co. KGaA

**Headword:**  
Fabric laundering method / UNILEVER

**Relevant legal provisions:**  
EPC Art. 56  
RPBA 2020 Art. 13(1), 25(1), 25(2)  
RPBA Art. 12(4)

**Keyword:**

Inventive step (main request and auxiliary requests 1, 2 and 5) : (no)

Admissibility of auxiliary requests 3 and 4 : (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

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Case Number: T 0740/18 - 3.3.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.06**  
**of 16 April 2020**

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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 9 February 2018  
rejecting the opposition filed against European**

patent No. 2694635 pursuant to Article 101(2)  
EPC.

**Composition of the Board:**

**Chairman**            J.-M. Schwaller  
**Members:**            L. Li Voti  
                          J. Hoppe

## Summary of Facts and Submissions

I. The appeals of the two opponents (hereinafter the "appellants") lie from the decision of the opposition division to reject their oppositions against European patent n° 2 694 635 which had been granted with the following claim 1:

*"1. A method of laundering fabric onto which a cationic fabric softening active has been deposited and dried comprising the step of contacting the fabric with an aqueous wash liquor having the following composition:*

*a) 15 to 600 ppm non-soap surfactant,*

*b) at least 50 ppm ethoxylated polyethylene imine,*

*c) at least 25 ppm polyester soil release polymer,*

*the total level of polymer (b + c) being at least 20 wt% of the level of non soap surfactant (a),*

*d) 0.1 to 100 ppm enzyme selected from protease, amylase, cellulase,*

*e) optionally, lipase enzyme."*

II. With their statement of grounds the appellants contested inter alia the inventive step of this claim in the light of documents E1 (WO 2009/153184 A1) and E3 (Liquid Detergents, Second Edition, edited by Kuo-Yann Lai, 2006, pages 487-554). They also cited:

E4: WO 93/18124 A1;

E5: *"Detergents and Textile Washing, Principles and Practice"*, G. Jakobi, A. Löhr, 1987, pages 14-21 and 165-166;

E6: *"Cationic Surfactants: Physical Chemistry"*, edited by D.H. Rubingh and P.M. Holland, 1991, pages 449-467;

E7: "*Soil Release Polymers*" by A.J. O'Lenick, Jr.,  
Journal of Surfactants and Detergents, Vol. 2, No. 4  
(October 1999), pages 553-557.

- III. In their reply dated 2 November 2018 the respondents (patent proprietors) defended the patent as granted and filed three sets of amended claims as auxiliary requests 1 to 3.
- IV. With a further letter dated 7 November 2019 they filed two further sets of claims to be considered as auxiliary requests 3 and 4, respectively, and renumbered the previous auxiliary request 3 as auxiliary request 5.
- V. In response to the preliminary opinion of the board, the respondents withdrew their request for oral proceedings and informed the board that they would not be represented at the oral proceedings, should they still take place.
- VI. Appellant/opponent 1 requested that the late filed auxiliary requests 3 and 4 be not admitted into the proceedings. Moreover, it submitted that the auxiliary requests 3 and 4 did not comply with the requirements of Articles 83, 84, 123(2) and 56 EPC.
- VII. The final written requests of the parties were as follows:

The appellants requested that the decision under appeal be set aside and the patent be revoked. Appellant/opponent 1 requested also that auxiliary requests 3 and 4 be not admitted into the proceedings.

The respondents requested that the appeals be dismissed or, auxiliarily, that the patent be maintained on the basis of one of the auxiliary requests 1 or 2 filed with letter of 2 November 2018, or of auxiliary requests 3 to 5 filed with letter of 7 November 2019.

VIII. Claim 1 of auxiliary request 1 differs from claim 1 as granted in that it relates to "A method of laundering a polyester or cotton fabric, or mixtures thereof, ...".

Claim 1 of auxiliary request 2 differs from claim 1 as granted in that it relates to "A method of laundering a polyester fabric onto which a cationic fabric softening active has been deposited and dried comprising the step of contacting the polyester fabric ...".

Claim 1 of auxiliary request 3 reads as follows:

"1. Use of an aqueous wash liquor having the following composition:

- a) 15 to 600 ppm non-soap surfactant,
- b) at least 50 ppm ethoxylated polyethylene imine,
- c) at least 25 ppm polyester soil release polymer, the total level of polymer (b + c) being at least 20 wt% of the level of non soap surfactant (a),
- d) 0.1 to 100 ppm enzyme selected from protease, amylase, cellulase,
- e) optionally, lipase enzyme

for laundering polyester fabric onto which a cationic fabric softening active has been deposited and dried, the laundering comprising contacting the fabric with the aqueous wash liquor, wherein the aqueous wash liquor is used for reducing a drop in stain removal performance which results from the presence of the deposited cationic fabric softening active on the polyester fabric."

Claim 1 of auxiliary request 4 differs from claim 1 of auxiliary request 3 in the following wording "..., the *laundrying comprising contacting the polyester fabric with the aqueous wash liquor, wherein the aqueous wash liquor is used for reducing a drop in stain removal performance which results from the presence of the deposited cationic fabric softening active on the polyester fabric, relative to the stain removal performance in the absence of the deposited cationic fabric softening active.*".

Claim 1 according to auxiliary request 5 differs from claim 1 as granted in that it relates to "A method of *laundrying fabric ... contacting the fabric with an aqueous wash liquor having the following composition:*  
a) 200 to 400 ppm non-soap surfactant ..."

## **Reasons for the Decision**

1. Main Request (patent as granted) - inventive step
- 1.1 The invention

According to paragraph [0002] of the patent, cationic rinse conditioners are known to exhaust almost completely onto fabrics during the rinsing process. Furthermore, it is known from E3, page 490, that anionic surfactants complex with cationic actives with the resulting complex being deposited onto fabrics and the stain removal performance of detergent products comprising anionic surfactants being reduced.

The object of the patent (paragraph [0007]) is thus to provide a washing composition that can be used in a laundry detergent process such that the wash



performance is less compromised by previous use of a fabric conditioner.

1.2 The closest prior art

1.2.1 The appellants considered E1, already cited in the patent, to represent the most suitable starting point for the evaluation of inventive step. According to the respondents E4, also cited in the patent, was a more suitable starting point.

1.2.2 The board notes that E1 concerns (page 1, lines 6-9) a process of laundering fabrics using a concentrated detergent which exhibits better removal of everyday dirt and stains than commercial products (page 5, lines 4-5). Since E1 concerns an everyday method of laundering, it implicitly relates to the washing of fabrics which may have also been previously treated in the rinse step with fabric conditioners like the commonly used cationic ones, as stated in the patent (page 2, line 47) and confirmed by common general knowledge (see E3 (pages 499-500, section IV, page 515, first paragraph of section C), E5 (pages 165-166) and E6 (pages 449-450, especially page 450, section A)).

Therefore, E1 is certainly a good starting point for the evaluation of inventive step.

1.2.3 E4 concerns (page 3, second full paragraph) a different technical problem, namely the provision of laundry detergent compositions having improved dissolution characteristics of their particulate components. Additionally E4 (page 3, last full paragraph) addresses the problem arising from the complexation of anionic surfactants with cationic fabric softeners possibly present during the wash as residues from the fabric to

be washed and the washing performance reduction resulting therefrom in compositions comprising low levels of anionic surfactants (5 to 10% by weight), i.e. compositions to which neither claim 1 of E4 nor that of the patent in suit are limited.

In the board's view, E4 is thus not more suitable as starting point than E1.

- 1.2.4 As acknowledged in the patent (page 3, lines 27-28), the wash liquor to be used is that described in E1. Therefore, the method of laundering fabric disclosed in E1 has also more technical features in common with the method of claim 1 at issue than that disclosed in E4.

E1 is therefore the best starting point for the evaluation of inventive step, as also found in the decision under appeal.

- 1.2.5 Within E1, the embodiment closest to the invention - and so the closest prior art - is represented by example 24, which discloses a method of laundering mixed unwashed textiles of polyester and cotton fabrics with an aqueous wash liquor having a composition in accordance with all the requirements of claim 1 at issue.

### 1.3 The technical problem

- 1.3.1 According to the respondents (page 8 of the letter of 2 November 2018), when starting from E1 as closest prior art, the problem underlying the claimed invention lies in the provision of a method of laundering fabrics that have a cationic fabric softening active deposited thereon that results in a smaller reduction in wash performance (i.e. a better wash performance) on fabrics

pre-treated with cationic rinse conditioner when compared to known detergent liquids.

This technical problem has been allegedly solved by the method of claim 1, which makes use of the compositions known from E1 (see paragraph [0005] of the patent).

1.3.2 Even though the experimental data contained in the patent (paragraphs [0119] to [0138]) do not appear to show a clear improvement, as alleged by the appellants, for all the types of fabric treated when compared with different commercially available compositions containing greater amounts of anionic surfactants, the board accepts for the sake of argument and in the respondents' favour that the technical problem as formulated above has been effectively solved by the method according to claim 1 at issue.

1.4 Obviousness of the solution

1.4.1 It is not in dispute that the sole difference between the method of laundering disclosed in E1/example 24 and the subject-matter of claim 1 at issue is that the fabric washed according to the prior art method, is not explicitly a fabric onto which cationic softening actives have been deposited and dried.

1.4.2 It remains to be decided whether it would have been obvious for the skilled person to apply the method of laundering used in said prior art example to a fabric onto which cationic softening actives have been deposited and dried, and to expect that such method would result in a smaller reduction in wash performance, for example stain removal, in comparison to a method using commercially available detergent liquids.

1.4.3 The respondents argued that the skilled person would not have envisaged to apply the laundering method of E1, example 24, to a fabric onto which cationic softening actives were already deposited and dried, because E1 did not suggest that the compositions disclosed therein might have any potential benefit when washing such a fabric. Moreover the skilled person would have been hindered to use the compositions of E1 on such a fabric because it would have expected the cationic fabric softener to interfere with the stain removal ability of the composition, especially at low surfactant concentrations, as stated for example in E4 (page 3, final paragraph) and in paragraph [0002] of the patent.

1.4.4 The board however notes that it was well known that complexation of the cationic softeners with anionic surfactants brought a loss in washing performance, as the thus complexed anionic surfactants could not contribute to the washing performance in the same way as uncomplexed ones. Therefore, it was reasonable to expect that a composition comprising a low in-wash surfactant level and based mainly or solely on anionic surfactants, as for example those of comparative examples A and B of the patent, would show a great loss in washing performance, as suggested in paragraph [0002] of the patent and in E4, since the amount of active anionic surfactants in the presence of cationic softeners would be reduced, as can be seen from the passage at page 490 of E3 (also referred to in paragraph [0002] of the patent) reading: "*As cationic actives precipitate in the presence of anionic surfactants, thereby losing most of their efficacy, the anionic surfactant concentration in the liquor **must be kept as low as possible***".

1.4.5 However, in the board's conviction, the skilled person would not have found in E1 any teaching deterring him from using a commonly known cationic softener, let alone from applying the laundering method of E1/example 24 to a fabric which had been treated in previous washing cycles with known cationic fabric softeners commonly used in the art (see E3, E5 and E6). Moreover, it was obvious for the skilled person, in the light of common general knowledge, to reduce the amount of anionic surfactants in the presence of cationic actives in the wash liquor and to look for further cleaning components which were not affected by the presence of cationic softeners and which could maintain the washing performance.

As disclosed in the patent itself (paragraphs [0003] and [0004]), this is exactly what has been attempted in the prior art, including E1, which states (page 13, lines 23-27) that its compositions, while using less surfactant (including anionic surfactants) per wash than fully formulated commercial compositions exhibit at least parity in performance and on many stains and dirt improved performance. This performance boosting which compensates the reduction in total non-soap surfactants, including anionics, is achieved (E1: page 8, first paragraph and paragraph bridging pages 38 and 39) by rebalancing the cleaning performance - expected to be reduced by the use of less surfactant - with EPEI (ethoxylated polyethylenimine) and soil-release polymers, i.e. the two polymers also used in claim 1 at issue. That soil release polymers are compatible with and do not interfere with anionic and cationic surfactants was also well known (see E7, page 554, left column, first full paragraph in the section SOIL RELEASE POLYMERS).

The better removal of everyday dirt and stains in comparison to commercial products with much higher surfactant levels, referred to on page 5, first paragraph of E1, is confirmed by the stain removal results of example 24 of E1 when compared to the commercial product Persil Small and Mighty™, which has a higher level of non-soap surfactants (page 56, lines 8-15 of E1) and neither comprises a carbobetaine surfactant nor EPEI (page 67, lines 17-19).

- 1.4.6 Therefore, the skilled person would have expected that the method of example 24 of E1, because of the use of a low amount of anionic surfactants and the boosting of cleaning performance achieved by the use of EPEI and soil redeposition polymers, which are not negatively affected by the presence of cationic softeners, when applied to fabrics having cationic actives deposited and dried thereon, would still perform better (and thus result in a smaller reduction in stain removal performance) than a method using other commercial compositions comprising greater amounts of anionic surfactants.
- 1.4.7 The board therefore concludes that it would have been obvious for the skilled person to try the washing liquor of E1/example 24 in order to solve the technical problem formulated above and so arrive at the subject-matter of claim 1 at issue, which thus lacks an inventive step (Article 56 EPC).
- 1.5 It follows that the main request is not allowable.

2. Auxiliary request 1 - Inventive step

2.1 Claim 1 of this request differs from that of the main request in that the method of laundering is applied to cotton or polyester fabrics or mixtures thereof.

2.2 The board notes that E1 (passage bridging pages 38 and 39) already teaches that the wash liquors used therein provide increased stain removal performance particularly on polyester fabric. Similarly, the laundering method of the closest prior art (E1/example 24), when applied to cotton and polyester fabrics, is also disclosed as providing improved stain removal performance in particular on polyester fabrics as shown in table 12 (page 70).

Thus, it would have been obvious for the skilled person, for the same reasons as those given for the main request, to try the wash liquor of D1/example 24 at least on polyester fabrics having cationic actives deposited and dried thereon with the expectation of providing a smaller reduction in stain removal performance in comparison to other commercially available compositions.

2.3 Claim 1 of this request thus does not involve inventive step and the request is not allowable either.

3. Auxiliary request 2 - Inventive step

3.1 Since claim 1 of this request differs from that of the main request in that the method of laundering is applied to polyester fabric only, the reasons exposed above for claim 1 of auxiliary request 1 apply mutatis mutandis to this request.

3.2 Claim 1 according to auxiliary request 2 thus does not involve inventive step and the request is not allowable either.

4. Admittance of auxiliary requests 3 and 4

4.1 These requests were filed with letter dated 7 November 2019, i.e. about one year after the respondents replied to the grounds of appeal. In their letter (point 4.) the respondents acknowledged the lateness of the requests but submitted that the limitation to a specific use resulted in clearly allowable subject-matter.

4.2 Under Article 13(1) RPBA 2020 any amendment to a party's appeal case after it has filed its grounds of appeal or reply is subject to a party's justification for its amendment and may be admitted only at the discretion of the Board. The criteria for the exercise of that discretion are set out in Article 13(1), 2<sup>nd</sup> to 4<sup>th</sup> sentence RPBA 2020. One criteria is whether the amendment is detrimental to procedural economy, in particular whether it prima facie overcomes the issues raised during the proceedings (Article 13(1), 4<sup>th</sup> sentence.

4.3 In the case at issue, at variance with the previous requests, each claim 1 of auxiliary request 3 or 4 is not drafted as a method claim but as a use claim *including process features*.

For the board, because of the presence of these process features it is at first sight unclear whether the category of this claim is a use, or merely a process making use of the described composition, like the claims of the higher ranking requests.



4.4 Furthermore, each claim 1 requires that "*the aqueous wash liquor is used for reducing a drop in stain removal performance which results from the presence of the deposited cationic fabric softening active on the polyester fabric*", which drop in stain removal is specified in the text of claim 1 of auxiliary request 4 to be "*relative to the stain removal performance in the absence of the deposited cationic fabric softening active*".

4.4.1 For the board it is unclear from said wording, on the one hand, what is to be understood by the expression "**drop** in stain removal performance", in particular which decrease in stain removal performance would be considered a "drop", and on the other hand, which are the conditions, for example which composition/method is to be used, under which said drop in stain removal performance is supposed to be reduced.

4.5 Last but not least, the subject-matter of each claim 1 appears at first sight to lack inventive step for the same reasons as those exposed with respect to the higher-ranking requests, as it relates to the use of the same composition as the one used in E1 for maintaining stain removal performance.

4.6 The board therefore has found auxiliary requests 3 and 4 not to be *prima facie* allowable with the consequence that they were not admitted into the proceedings under Article 13(1) RPBA 2020.

5. Auxiliary request 5

5.1 Claim 1 according to this request differs from claim 1 as granted in that the composition of the aqueous wash liquor requires 200 to 400 ppm non-soap surfactant.

- 5.2 It is not in dispute that the aqueous wash liquor of the closest prior art (example 24 of E1) already comprises about 360 ppm non-soap surfactants (LAS, SLES, Neodol 25-7 and betaine), as already indicated in the board's communication of 5 December 2019.
- 5.3 It follows, for the same reasons exposed above with respect to the main request, that claim 1 of this request lacks inventive step. The request is thus not allowable either.
6. As none of the sets of claims underlying the proposed requests meet the requirements of the EPC, the appeals succeed and the findings of the opposition division are to be reversed.

## Order

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated