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**Datasheet for the decision
of 29 November 2012**

Case Number: T 0413/10 - 3.3.07

Application Number: 03028205.7

Publication Number: 1428499

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A61Q 5/02, A61Q 5/12

Language of the proceedings: EN

Title of invention:
Aqueous hair cleansing composition

Patent Proprietor:
KAO CORPORATION

Opponents:
BASF Personal Care and Nutrition GmbH
UNILEVER PLC / UNILEVER NV

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Admissibility of new items of evidence"
"Inventive step -main request, first and third auxiliary requests (no)"
"Admissibility of late filed requests - second and fourth auxiliary requests (no)"

Decisions cited:
-

Catchword:

-



Case Number: T 0413/10 - 3.3.07

DECISION
of the Technical Board of Appeal 3.3.07
of 29 November 2012

Appellant: KAO CORPORATION
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted 22 December 2009
revoking European patent No. 1428499 pursuant
to Article 101(3) (b) EPC.**

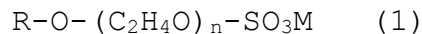
Composition of the Board:

Chairman: J. Riolo
Members: D. Semino
M.-B. Tardo-Dino

Summary of Facts and Submissions

- I. The appeal of the patent proprietor (appellant) lies against the decision of the opposition division announced at the oral proceedings on 30 November 2009 to revoke European Patent 1 428 499.
- II. Two notices of opposition had been filed against the granted patent requesting revocation of the patent in its entirety on the grounds of lack of novelty and lack of inventive step, in accordance with Article 100(a) EPC.
- III. The decision was based on a main request filed with letter of 30 October 2009. Claim 1 according to the main request read as follows:

"1. An aqueous hair cleansing composition comprising 5 to 30 wt.% of a sulfate surfactant which is composed of sulfates represented by the following formula (1):



wherein R represents a linear or branched C₈₋₁₈ alkyl or alkenyl group, n stands for 0 or a positive integer, and M represents sodium or ammonium, wherein 30 to 45 wt.% of the sulfates is a sulfate of formula (1) in which n=0, 18 to 27 wt.% of the sulfates is a sulfate of formula (1) in which n=1, 10 to 20 wt.% of the sulfates is a sulfate of formula (1) in which n=2, and the balance is a sulfate of formula (1) in which n is 3 or greater; and the total amount of the sulfates of formula (1) in which n is an integer of from 0 to 2 is 70 wt.% or greater based on all the sulfates, wherein the composition has a pH of 2 to 5 after diluted to 20 times the weight with water at 25°C."

IV. The following documents *inter alia* were cited in the decision under appeal:

D4: E. W. Flick, *Cosmetic and Toiletry Formulations*, 2nd edition 1989, pages 598, 642, 613 and 947

D5: "Eidesstattliche Versicherung" of Mr H.-P. Müller dated 23 April 2008

D6: E. W. Flick, *Cosmetic and Toiletry Formulations*, 2nd edition, volume 6, 1997, pages 249 and 386

D7: J. J. McKetta, *Encyclopedia of Chemical Processing and Design*, Volume 12, 1981, pages 110 and 111

V. That decision can be summarised as follows:

The compositions of D4 and D6 which comprised Standapol ES1 represented the closest prior art. The skilled person, in interpreting or modifying those compositions at the date of priority of the patent in suit, would have used as Standapol ES1 the product which was commercially available at that time, which, as evidenced by the analysis provided by opponent 2 and by the affidavit D5, fell within the scope of the sulfates of claim 1 of the main request. The effective difference between the subject-matter of claim 1 and that of the prior art was thus only the pH. The technical problem was the provision of an aqueous hair cleansing composition resulting in improved luster and manageability of the hair, as evidenced by the data in the patent and the comparative tests submitted by the proprietor. The skilled person, faced with that technical problem, was motivated by the teaching of D7 to reduce the pH of the known shampoo compositions with the expectation of achieving improved luster and

manageability of the hair. On that basis no inventive step could be acknowledged.

VI. The patent proprietor (appellant) appealed that decision. With the statement setting out the grounds of appeal the main request on which the decision was based was maintained and two sets of claims were submitted as first and second auxiliary requests together with some test data (D17).

VII. In their replies to the statement setting out the grounds of appeal the opponents 1 and 2 (respondents 1 and 2) maintained the objection of lack of inventive step. At that stage (letter of 6 October 2010) respondent 2 contested *inter alia* the relevance of the additional test data filed by the appellant (D17) and submitted five additional items of evidence:

D12: US-A-5 254 336

D13: C. U. Patel, "Anti-static properties of some cationic polymers used in hair care products", International Journal of Cosmetic Science, 5 (1983), pages 181 to 188

D14: UCARE Polymers brochure, Amerchol, September 2002

D15: B. R. Gallot, "Hair and skin Care Biomaterials", from "Polymeric Materials Encyclopedia", edited by J. C. Salamone, 1996, pages 2901, 2902 and 2904

D16: B. Idson, "Polymers as Conditioning Agents for Hair and Skin", from "Conditioning Agents for Hair and Skin", edited by R. Schueller and P. Romanowski, 1999, pages 251, 255, 256 and 270

VIII. With a further reply dated 25 February 2011 the appellant submitted additional test data as D17'

(repeating and complementing the test data D17 filed with the grounds of appeal) and D18.

- IX. In a communication sent in preparation to oral proceedings the Board summarised the points under discussion and conveyed its provisional opinion.
- X. With letter of 26 October 2012 the appellant filed a set of claims as revised second auxiliary request and an additional item of evidence:
- D19: C. R. Robbins, "Chemical and Physical Behaviour of Human Hair", Fourth Edition, Springer, pages 446 and 447.
- XI. With letter of 14 November 2012 respondent 2 submitted a further version of D19 including a few more pages, namely pages 448 and 467 to 469 (D19 will indicate both the version filed by the appellant and the one filed by respondent 2 in what follows).
- XII. Oral proceedings were held on 29 November 2012. During the oral proceedings the appellant filed 4 sets of claims as first to fourth auxiliary request, which resulted from the reordering of the previously filed requests and the addition of a further one. In detail, the first auxiliary request corresponded to the first auxiliary request filed with the statement of grounds, the second auxiliary request was newly filed, the third auxiliary request corresponded to the second auxiliary request filed with the statement of grounds and the fourth auxiliary request corresponded to the revised second auxiliary request filed with letter of 26 October 2012.

Claim 1 according to the first auxiliary request corresponded to claim 1 of the main request with the addition that the composition further comprised "a cationic polymer selected from cationic cellulose derivatives (*sic*) and cationic guar gum derivatives". Claim 1 according to the second auxiliary request corresponded to claim 1 of the first auxiliary request with the specification of the quantity of the cationic polymer ("0.05 to 1 wt.%, based on the composition"). Claim 1 according to the third auxiliary request was directed to the use of the composition according to claim 1 of the main request "for improving luster and manageability". Claim 1 according to the fourth auxiliary request corresponded to claim 1 according to the third auxiliary request, wherein the use was limited to "improving manageability".

XIII. The arguments of the appellant (patent proprietor), as far as relevant to the present decision, can be summarised as follows:

Admissibility of new items of evidence

- (a) Documents D12 to D16, filed by respondent 2, were late filed and were not of higher relevance than the documents already on file. The tests in D17' and D18 were filed by the appellant in reaction to the replies to the grounds of appeal immediately after those replies were received to support the improvement in both luster and manageability and to complete the tests in D17 which had been objected to by respondent 2.

Main request - inventive step

- (b) The composition disclosed in D6 which was used as a starting point in the decision under appeal contained Standapol ES1. The analysis results for that product in combination with the declaration D5 referred to the composition of Standapol ES1 in the period 1997 to 2002. That information was not relevant for D6, which was published in 1997, but, being a textbook, referred to formulations which had been produced earlier. As there was no evidence concerning the composition of Standapol ES1 prior to 1997, there was a gap in the argumentation of the respondents and it could not be acknowledged that the composition was known or equal to the one after 1997. The composition of claim 1 of the main request differed therefore from the one disclosed in D6 in the value of the pH and in the sulfate distribution. The tests in the patent together with those provided in appeal showed an improvement in both luster and manageability of the hair treated by the composition as a result of the specific combination of the distinguishing features together with good foaming properties. D17' and D18 in particular showed the results of luster and manageability as separate properties of the treated hair. The problem to be solved was therefore the provision of a composition which improved on application luster and manageability of the hair and had good foaming properties. It was not obvious to modify the known composition as in claim 1 of the main request in view of the available prior art. Indeed several possibilities

were available to the skilled person, as shown e.g. by the several compositions with satisfactory properties listed in D4 and there was no indication to choose the solution in the patent. D7 in particular related to low pH shampoos and indicated a gain in luster as a consequence of the low pH, but did not mention manageability, nor the effect on the foaming properties. Luster and manageability were two distinct properties, the first one being related to the reflection of light by the treated fiber and the second one to the ease in aligning the hair fibers parallel to each other (fiber orientation). Luster could in principle be measured on a single fiber, while manageability was influenced also by the type of hair and had to be measured on a hair bundle. Therefore the disclosure in D7 of the improvement in luster was not a sufficient indication to lower the pH in order to solve the posed problem; the skilled person could have decided to lower the pH, but would not necessarily have done so.

First auxiliary request - inventive step

- (c) The additional tests provided in appeal (D17' and D18) showed the advantages related to the addition of a cationic polymer selected from cationic cellulose derivatives and cationic guar gum derivatives, in particular in terms of reduction in friction among individual hairs during cleansing. Those advantages had been describe in paragraphs [0016] and [0017] of the patent in suit. As the effects were not known or suggested in the available prior art, the presence of an inventive

step had to be acknowledged. In this respect it was relevant to note that D6 and D7 did not mention the use of cationic polymers, D12 pertained to a different field, namely treatment of hair damaged by alkaline compositions, and D14 did not disclose low pH compositions and that a combination of three documents was normally not allowed in the analysis of inventive step.

Second auxiliary request - admissibility

- (d) Claim 1 of the second auxiliary request included only a small amendment compared to claim 1 of the first auxiliary request and was filed as a reaction to the arguments of respondent 2 in the reply to the statement of grounds contesting the possibility of having a content of cationic polymer from trace values to 95 wt.%.

Third auxiliary request - inventive step

- (e) The use of claim 1 of the third auxiliary request was inventive over the available prior art for the same reasons as detailed for the composition of claim 1 of the main request.

Fourth auxiliary request - admissibility

- (f) Claim 1 of the fourth auxiliary request included only a small amendment compared to claim 1 of the third auxiliary request and was filed as a reaction to the objection of lack of inventive step in the replies of the respondents and in the preliminary opinion of the Board as expressed in

its communication. The examples in the original application showed an improvement in manageability related to the use of the composition and it was clear to the skilled person reading the original application that luster and manageability were two separate relevant properties, so that there could be no doubt with regard to the requirements of Article 123(2) EPC.

XIV. The arguments of the respondents (opponents 1 and 2), as far as relevant to the present decision, can be summarised as follows:

Admissibility of new items of evidence

(a) Documents D12 to D16 were filed in reaction to the filing of two new auxiliary requests at the beginning of the appeal proceedings, which included amendments taken from the description of the contested patent. The additional test data D17' and D18 and the additional document D19 were late filed amendments of the appellant's case and should not be admitted.

Main request - inventive step

(b) The crucial issue regarding the disclosure of D6 regarded the product Standapol ES1. The evidence provided by respondent 2 (analysis of the product in combination with the declaration D5) proved that the product had a composition anticipating the sulfate distribution in claim 1 of the main request from the beginning of 1997. As D6 was published in 1997, there was no gap in the

evidence available and it was irrelevant what the composition before 1997 was. The composition of claim 1 of the main request differed therefore from the one of D6 only in the value of the pH. As the available tests showed an improvement in luster and manageability as a consequence of lower pH values and no variation in the foam properties, the problem to be solved was the provision of a composition which improved luster and manageability of the hair on application. Document D7 disclosed the antismoothing action of mild aqueous acids on the cuticle scales of the hair, which resulted in a gain in luster due to the tightening of the cuticle. That disclosure gave a clear hint to reduce the pH in the composition of D6 in order to solve the posed problem. In that respect it was relevant to note that the two desired properties (improved luster and manageability) were strictly linked to each other and both were related to a smoother hair surface, which made it possible both a better reflection and easier alignment due to a reduction in friction. Those properties were considered as a single attribute in the patent in suit, where they were always mentioned in combination and a single score was used in the tests to evaluate both, and gave statistically undistinguishable results in the tests provided in appeal, where for the first time two separate scores were used. The teaching of D7 gave therefore a clear hint to modify the composition of D6 in such a way so as to obtain a composition according to claim 1 of the main request without any inventive activity.

First auxiliary request - admissibility and inventive step

- (c) The first auxiliary request which corresponded to the first auxiliary request filed with the statement of grounds could have been filed during first instance proceedings at the latest at the oral proceedings before the opposition division, where an employee of the appellant was present and could have authorised the filing of new requests. On that basis it should be held inadmissible with respect to Article 12(4) of the Rules of Procedure of the Boards of appeal (RPBA).
- (d) The composition of claim 1 of the first auxiliary request differed from the composition of D6 in the value of the pH and in the presence of specific cationic polymers. As the two differences did not have a synergistic effect, they had to be treated separately. The choice of the specific pH range did not contribute to the presence of an inventive step for the same reasons as detailed for the main request. The second distinguishing feature was allegedly advantageous in relation to texture and lubricity of the foam, reduction in friction during cleansing and smoothness of the hair during drying. The data available, however, were either not appropriate to provide a comparison between the claimed composition and the closest prior art or did not show sensible improvements in the relevant properties related to the addition of the specific cationic polymers. In any case those cationic polymers were common ingredients of conditioning shampoos, which were normally used

exactly for the same purposes as indicated in the patent in suit. Their use was disclosed e.g. in D4, in D12 also in the presence of low pH values and in D14 for conditioning and for obtaining good foam quality. Also the addition of the specific cationic polymers did not result therefore in the presence of an inventive step. As to the combination of more than two documents, it was noted that, when several known ingredients (here an acid and a cationic polymer) are added to a composition of the prior art and each is used for its known effect, it is reasonable to add up several documents, wherein each of them is meant to illustrate a normal modification of the composition which is used as a starting point.

Second auxiliary request - admissibility

- (e) The second auxiliary request filed only at the oral proceedings before the Board was late filed and there was no justification for its late filing. If it were a reaction to an objection in the reply of respondent 2 to the statement of grounds, it should have been filed right after that and not at a stage of the proceedings in which the respondents had no time to react by filing further experimental evidence.

Third auxiliary request - admissibility and inventive step

- (f) The third auxiliary request which corresponded to the second auxiliary request filed with the statement of grounds should be held inadmissible

for the same reasons as the first auxiliary request.

- (g) The use of claim 1 of the third auxiliary request was not inventive for the same reasons as detailed for the composition of claim 1 of the main request.

Fourth auxiliary request - admissibility

- (h) The fourth auxiliary request filed as revised second auxiliary request shortly before the oral proceedings was late filed. There was no justification for its late filing and that request introduced problems with regard to Article 123(2) EPC, as there was no basis for an improvement in manageability separate from an improvement in luster in the original application.

XV. The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained on the basis of the main request filed with letter of 30 October 2009 or, in the alternative, on the basis of one of the first to fourth auxiliary requests filed during the oral proceedings.

XVI. The respondents (opponents 1 and 2) requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Admissibility of new items of evidence

2. All further items of evidence which were filed during the appeal proceedings (D17, D12 to D16, D17', D18 and D19) were contested by the opposing parties, so that their admissibility is to be decided upon.
 - 2.1 D17 contains some tests which were filed by the appellant with the statement of grounds to contest the decision on lack of inventive step by providing evidence of the effects achieved by the alleged distinguishing features. Documents D12 to D16 were filed by respondent 2 with its reply to the statement of grounds as a reaction to the filing with that statement of the first auxiliary request, which included features taken from the description (the specific cationic polymers, namely cationic cellulose derivatives and cationic guar gum derivatives). These documents contain information which is meant to show that the addition of that feature does not provide any inventive contribution. The further tests contained in D17' and D18 were filed by the appellant as a prompt reaction to the reply of respondent 2, which objected to the relevance and completeness of the tests in D17.
 - 2.2 The filing of all those documents (D17, D12 to D16, D17' and D18) can be seen as a legitimate reaction of the submitting party to the decision or to the submissions of the opposing party, which was undertaken as soon as the party was aware of the need of that

- reaction. Under such circumstances the Board does see any reason to object to the filing of those documents and decides to admit them into the proceedings, as complying with the principle of procedural economy.
- 2.3 The same cannot be said with regard to D19. That document was firstly submitted by the appellant more than two years after the latest submissions of the respondents and shortly before the convened oral proceedings.
- 2.4 The Board does not see any justification for the late filing, as no new elements were present in the file after the replies to the statement of grounds had been filed. In particular, no new points were raised in the communication of the Board, which was limited to a summary of the points already under discussion and to a preliminary opinion which was similarly based on issues and arguments which were already in the file. Moreover, the document was only meant to provide a definition of a property of treated hair ("manageability") which had always been a central property for the analysis of inventive step in the case (see e.g. the formulation of the technical problem in point 3.8 of the decision under appeal).
- 2.5 Under such circumstances the Board decides not to admit document D19 into the proceedings.

Main request - inventive step

3. *Closest prior art*

3.1 In the decision under appeal and in the arguments of the parties a composition of D4 and one of D6 were taken as equivalent starting points for the analysis of inventive step. In view of the available evidence the Board considers it appropriate to take D6 as the closest prior art.

3.2 D6 discloses a conditioning shampoo (page 249, upper half) comprising as major ingredients 61.25 wt.% water and 25.00 wt.% Standapol ES1, which is indicated in the list of raw materials of D6 (page 386, third element of the list) as being sodium laureth sulfate at 30%.

3.3 It was not disputed that this disclosure anticipates an aqueous hair cleansing composition comprising 5 to 30 wt.% of a sulfate surfactant which is composed of sulfates represented by the formula (1) of claim 1 of the main request, but there was no agreement among the parties whether sufficient evidence is available to conclude that the specific sodium laureth sulfate (Standapol ES1) used in the composition of D6 possesses the sulfate distribution which is given in claim 1 of the main request.

3.4 Respondent 2 provided with letter of 30 April 2008 evidence that the product Standapol ES1 as produced in 2007 had a sulfate distribution falling under the distribution given in claim 1 of the main request (35,43 wt.% of sulfates of formula (1) with n=0, 21.88 wt.% of sulfates of formula (1) with n=1, 15.49 wt.% of

sulfates of formula (1) with $n=2$, giving a total of 72.80 wt.% of sulfates of formula (1) with n from 0 to 2). Moreover, respondent 2 provided declaration D5 as evidence of the fact that the composition of Standapol ES1 did not change in the period from 1 January 1997 to 29 February 2008. Neither these pieces of evidence, nor their content (composition and dates) were contested by the appellant, who focussed on the contention that the skilled person would have understood that the product to be considered was Standapol ES1 produced prior to 1997.

3.5 As D6 was published in 1997, the skilled person reading it at its date of publication could only refer to the product available on the market at that time under the trademark Standapol ES1. Without any indication in the document that a different product available at a different point in time was meant, nothing different could be understood by the skilled person reading the document when it was published. The argument of the appellant that the composition of D6 should have been produced before 1997 with the result that the skilled person should have understood that by Standapol ES1 a product was meant which was available on the market at an unspecified previous date amounts only to speculation in the absence of evidence or clear information in the document in this respect.

3.6 In view of this the Board considers that the evidence on file is sufficient to prove that the composition of D6 has a sulfate distribution falling under the distribution given in claim 1 of the main request.

3.7 Document D6 contains no information on the pH of the composition as such or after dilution. Moreover, no evidence has been provided by the respondents that the given mixture of ingredients necessarily "has a pH of 2 to 5 after diluted to 20 times the weight with water at 25°C". They have instead acknowledged this feature as a distinguishing one. The Board has no reason to come to a different conclusion.

4. *Problem solved*

4.1 The purpose of the patent in suit is to provide "an aqueous hair cleansing composition which exhibits benefits which include good foaming properties and a high lubricating foam quality during shampooing, provides smooth feeling during rinsing, imparts the hair with luster and manageability, has good low-temperature stability and is substantially a non-irritant" (paragraph [0007]).

4.2 Out of these various properties the patent specifies that the choice of a preferred range for the pH is done "in view of improving the luster and manageability of the hair" (paragraph [0024], first sentence).

4.3 There was agreement among the parties that the desired effect (improvement of luster and manageability) is indeed achieved by the selection of the specific range of the pH ("2 to 5 after diluted to 20 times the weight with water at 25°C") and that this effect should therefore form the basis for the formulation of the solved problem.

4.4 Indeed the test available on file support the improvement of luster and manageability by adjusting the pH to values within the range of claim 1 of the main request. The tests in D18 in particular, wherein examples A and B represent compositions falling under claim 1 of the main request and comparative examples A and B concern compositions which differ from the previous ones only in the value of the pH after dilution (5.5 in the comparative examples as opposed to 3.7 in the examples) due to different quantities of added malic acid, show that, while the other tested properties (foaming speed and lubricity of the foam) remain equally satisfactory as in the comparative examples, luster and manageability are improved.

4.5 In view of this, the problem solved by the composition of claim 1 of the main request, starting from the one of D6, is the provision of a aqueous hair cleansing composition with improved luster and manageability of the hair on application and good foam quality.

5. *Obviousness*

5.1 It remains to be determined whether the proposed solution to the posed problem is obvious in view of the available prior art.

5.2 Document D7, an extract from an encyclopaedia, in a section on shampoos (i.e. aqueous hair cleansing compositions) dedicates a subsection to low pH shampoos (paragraph bridging pages 110 and 111) and discloses in that context that "mild aqueous acids cause an antismelling action on the cuticle scales of the hair" (third sentence of the subsection "Low pH Shampoos")

and that "as the cuticle tightens, the hair gains lustre because light is more efficiently reflected from the surface of the hair shaft" (fourth sentence of the same section).

- 5.3 It is therefore without doubt that D7 gives a direct hint to lower the pH of a shampoo in order to improve luster of the hair.
- 5.4 The argument of the appellant that such a hint is not sufficient to render the claimed composition obvious, because D7 only mentions luster, but not manageability and luster and manageability are two distinct properties, cannot be followed by the Board for the following reasons.
- 5.4.1 D7 provides in the passage cited above (see point 5.2) a physical explanation for the improvement of luster due to the low pH of the shampoo and relates it to the antismelling action on the cuticle scales. It is evident to the person skilled in the field that this action on the cuticle scales also implies an improvement in manageability of the hair, as it is reasonable to expect that a tightened cuticle with less swollen scales will be easier to manage. Even following the understanding of manageability of the appellant, namely that this property is related to the ease in aligning the hair fibers parallel to each other (fiber orientation), the person skilled in the art will expect that an improvement in this property will be achieved as a consequence of the antismelling action caused by the low pH.

5.4.2 The fact that the two properties are closely related to each other is confirmed by the disclosure in the patent in suit, where they are always mentioned in combination (see e.g. paragraphs [0001], [0007] and [0024]) and a single value is given in all the examples as a measure of luster and manageability (see paragraph [0041] and tables).

5.5 It is also not relevant that D7 does not mention the effect of low pH on the foaming properties of the shampoo, as the skilled person is aiming at maintaining and not improving these properties and, in the absence of an indication of the contrary, could not expect a deterioration of a not mentioned and normally desirable property of the shampoo by means of the suggested lowering of the pH.

5.6 In view of this the Board concludes that D7 gives a direct hint to the skilled person that the pH of the shampoo should be lowered in order to solve the posed problem. By doing so the skilled person would necessarily obtain a shampoo falling under claim 1 of the main request without any inventive activity. The composition of claim 1 of the main request does not involve therefore an inventive step.

First auxiliary request - admissibility and inventive step

6. The first auxiliary request filed at the oral proceedings before the Board corresponds to the first auxiliary request filed with the statement of grounds. The Board considers the filing of this request which has a clear limitation with respect to the main request meant to overcome the objection of lack of inventive

step in the appealed decision as a legitimate reaction of the appellant to the contested decision. While it can be true that the request could have been filed during first instance proceedings, the Board does not see any abuse of procedure in the filing of the request at the beginning of the appeal proceedings, once the reasons of the decision were clear to the appellant, and decides therefore to admit the request into the proceedings.

7. The additional feature of claim 1 of the first auxiliary request with respect to claim 1 of the main request, namely that the composition further comprises a cationic polymer selected from cationic cellulose derivatives and cationic guar gum derivatives, constitutes a further difference with respect to the conditioning shampoo disclosed in D6, which remains the closest prior art for the same reasons as detailed for the main request (see point 3.1, above), as that composition does not include any cationic polymer of that kind.
 - 7.1 It is necessary therefore to analyse the available evidence to see whether the presence of a further difference requires a reformulation of the posed problem.
 - 7.2 In the patent in suit the presence of cationic polymers is related to "the texture and lubricity of foam, reduction in friction among individual hairs during cleansing and smoothness of hair during drying" (paragraph [0016], first sentence). The appellant has filed during appeal further tests (D17' and D18) which are meant to show that those effects are obtained by

means of the addition of the specific cationic polymers. However, neither in the patent, nor in the arguments related to the additional tests it was argued that the specific cationic polymers could provide a synergistic effect with the specific pH conditions.

7.3 The Board considers that the examples of D17' are not suitable to provide a comparison between a composition according to claim 1 of the first auxiliary request and the composition of D6 for the following reasons.

7.3.1 Firstly, it is not specified whether the value of the pH given for all the compositions in D17' is the pH of the compositions as such or after dilution to 20 times the weight with water at 25°C as required by the claim. Without any indication in that sense the skilled person analysing these tests would understand that the pH given is the one of the compositions as such, which would mean that all the compositions of these tests are outside the scope of the claim. This conclusion is also reasonable in view of the fact that the composition of new comparative example 4 (fourth column in D17') has unsatisfactory results in terms of luster and manageability, which, following all the arguments of the appellant concerning the main request, would not make sense if the pH indicated were the one after dilution.

7.3.2 Secondly, the tests in D17' provide a comparison between compositions including the specific cationic polymers (cationic hydroxyethyl cellulose in example 1 and cationic guar gum in example 2) and compositions including a different cationic polymer (Polyquart H81 in comparative examples 3 and 4), while the composition

in D6 does not comprise any cationic polymers of those kinds.

7.4 The tests in D18 concern compositions for which the pH after dilution to 20 times the weight with water at 25°C is given and provide a comparison between compositions which differ only for the value of the pH (example A and comparative example A; example B and comparative example B) and between compositions which differ only by virtue of the addition of the specific cationic polymers (example A and example B; comparative example A and comparative example B), wherein only example B is representative of a composition according to claim 1 of the first auxiliary request.

7.5 These tests show that the selection of appropriate values of the pH after dilution is in itself sufficient to obtain fully satisfactory results in all the tested properties (foaming speed, lubricity of foam, luster and manageability) both in the presence and in the absence of the specific cationic polymers. A marginal improvement in those properties may be seen after addition of the cationic polymers (lubricity of foam from 18 to 19, luster from 19 to 20, manageability from 18 to 19), which is, however, of little relevance in view of the fact that the scale 1 to 20 of these results is related to tests conducted by visual evaluation of a panel of experts (paragraph [0041] in the patent) and a variation of a single unit in the scale can be simply attributed to a minimal variation in a subjective evaluation and is not of any statistical significance.

- 7.6 In view of the analysis of the available tests the Board concludes that the problem solved by the composition of claim 1 of the first auxiliary request is the same as the one posed for claim 1 of the main request, namely the provision of a aqueous hair cleansing composition, starting from the one of D6, with improved luster and manageability of the hair on application and good foam quality (see point 4.5, above).
- 7.7 The selection of a pH which fulfils the conditions in the claim in order to solve the posed problem is not inventive for the reasons given for the main request (point 5, above).
- 7.8 The addition of a cationic polymer selected from cationic cellulose derivatives and guar gum derivatives to the claimed composition is also not inventive in view of the fact that these cationic polymers are usual conditioning ingredients which are commonly added to shampoos in view of their conditioning properties. This is apparent from the various documents filed by respondent 2 with the reply to the statement of grounds (D12 to D16), as exemplified by the disclosure of D14 which concerns cationic cellulose derivatives (UCARE polymers obtained from quaternisation of hydroxyethylcellulose: page 4, first three paragraphs of D14) and discloses their use in shampoos and hair care systems in view of their conditioning properties (page 3, first paragraph; pages 18 and 19, examples concerning shampoos).
- 7.9 In this context the Board cannot follow the argument of the appellant that a combination of more than two

documents should not be allowed in the analysis of inventive step. If, as in the present case, the claimed composition differs from a known one by two (here a mild acid for the adjustment of the pH and a specific cationic polymer) or more ingredients and each of the missing ingredients is a known ingredient for those kind of compositions which is added in order to achieve its well-known function (here improving luster and manageability for the mild acid and giving a conditioning effect for the cationic polymer) without any synergy with the other missing ingredients, it is not relevant whether the information concerning the missing ingredients comes from a single prior art document or a plurality of them.

- 7.10 For these reasons, the composition of claim 1 of the first auxiliary request does not involve an inventive step.

Second auxiliary request - admissibility

8. The second auxiliary request was filed for the first time at the oral proceedings before the Board. Claim 1 according to that request includes the specification of the quantity of cationic polymer and is meant to overcome the objection of respondent 2 in the reply to the statement of grounds that no effect could be acknowledged as related to the presence of a cationic polymer, as that component could be present in quantities going from trace value to 95 wt.%.

- 8.1 The Board does not see any justification for the filing of the request only at the oral proceedings, when the relevant objection had been present in the file since

the reply to the statement of grounds had been filed by respondent 2, namely more than 2 years before the oral proceedings. Moreover, that amendment addresses an objection which has not been considered as relevant in the decision on the first auxiliary request and does not propose a solution to the crucial issues of lack of inventive step. Further, if it had been argued (which was not the case) that the specific quantity provided an unexpected effect, then the chance should have been given to the opposing parties to demonstrate the contrary, which would not have been possible without adjournment of the oral proceedings.

- 8.2 Under such circumstances the Board decides not to admit the second auxiliary request into the proceedings.

Third auxiliary request - admissibility and inventive step

9. The third auxiliary request filed at the oral proceedings correspond to the second auxiliary request filed with the statement of grounds. As far as admissibility is concerned, the same reasoning applies as for the first auxiliary request (see point 6, above; the limitation of the claim is in this case the change of category from a product claim to a use claim) and therefore the Board decides to admit the request into the proceedings.

10. Claim 1 according to the third auxiliary request concerns the use of the composition of claim 1 of the main request for improving luster and manageability.

- 10.1 In spite of the change in category the claim is related exactly to the same composition as the main request and

concerns its use for the specific purpose which has been acknowledged in the formulation of the technical problem for the main request (see points 3 to 5, above). The parties have all decided in view of this not to present any different arguments for claim 1 of the third auxiliary request, but to refer to the arguments already presented for the main request.

10.2 Under such circumstances, the Board does not see any reason to come to a different conclusion as regards the appreciation of inventive step with respect to the same prior art and does not see any need to analyse the issue in any further detail, as no supplementary arguments need to be addressed.

10.3 The subject-matter of claim 1 of the third auxiliary request does therefore not involve an inventive step.

Fourth auxiliary request - admissibility

11. The fourth auxiliary request corresponds to the revised second auxiliary request filed with letter of 26 October 2012 (one month before the oral proceedings). Claim 1 of that request further limited the use of claim 1 of the third auxiliary request by deleting the reference to luster and including only the improvement in manageability.

11.1 Similarly to auxiliary request 2, there was no justification for the filing of that request at such a late stage of the proceedings, as no new elements had been brought to the case after the replies of the respondents to the statement of grounds. In that respect, nothing new had been introduced in the

communication of the Board. Moreover, the new request brings further problems, in particular with respect to the requirements of Article 123(2) EPC, as no single basis in the original application has been cited by the appellant in which the improvement in manageability of the hair is disclosed separately from the improvement in luster.

11.2 Under such circumstances the Board decides not to admit the fourth auxiliary request into the proceedings.

Conclusion

12. Since claim 1 according to all the admissible requests on file does not involve an inventive step, there is no need for the Board to decide on any other point and the appeal is dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

S. Fabiani

J. Riolo