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**Datasheet for the decision
of 16 September 2009**

Case Number: T 1817/06 - 3.3.07

Application Number: 95911274.9

Publication Number: 0749299

IPC: A61K 7/06

Language of the proceedings: EN

Title of invention:
Hair conditioning composition

Patent Proprietors:
Unilever PLC, et al

Opponents:
01: KPSS-Kao Professional Salon Services GmbH
02: Henkel AG & Co. KGaA

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 54, 56

Keyword:
"Novelty - main request (no)"
"Novelty - auxiliary request (yes)"
"Inventive step - auxiliary request (no)"

Decisions cited:
T 0396/02

Catchword:
-



Case Number: T 1817/06 - 3.3.07

D E C I S I O N
of the Technical Board of Appeal 3.3.07
of 16 September 2009

Appellants: Henkel AG & Co. KGaA
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Representative: -

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Representative: -

Decision under appeal:

Decision of the Opposition Division of the European Patent Office posted 7 November 2006 rejecting the oppositions filed against European patent No. 0749299 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: S. Perryman
Members: D. Semino
F. Rousseau

Summary of Facts and Submissions

I. The appeal by opponents 02 lies against the decision of the Opposition Division posted on 7 November 2006 to reject the oppositions against European patent No. 0 749 299 based on European application No. 95 911 274.9.

II. The patent had been granted on the basis of seven claims, of which the two independent claims 1 and 5 read:

"1. A rinse off hair conditioning composition substantially free from anionic surfactant comprising:
(a) 0.05 to 5% by weight of cationic surfactant selected from cetyl trimethylammonium chloride, behenyl trimethyl ammonium chloride and mixtures thereof,
(b) 0.01 to 10% by weight of an emulsion polymerised dimethiconol nonionic conditioning polymer having the formula:



where n is greater than 2700, and

(c) water, wherein the viscosity of the dimethiconol lies in the range 1-20 million cst."

"5. A method for preparation of a rinse off conditioning composition which contains a cationic surfactant and insoluble silicone having a molecular weight above 200 000 and a viscosity of greater than 1 million cst as the conditioning agent comprising the steps of forming the silicone into an emulsion, the emulsion having a viscosity of less than 1000cps, then mixing the emulsion with the other conditioner ingredients including the cationic surfactant".

III. Two notices of oppositions against the patent were filed in which revocation of the patent in its entirety was requested on the grounds of lack of novelty and lack of inventive step (Article 100(a) EPC), insufficiency of disclosure (Article 100(b) EPC) (opponents 01 and 02) and extension of the subject-matter of the European patent beyond the content of the application as filed (Article 100(c) EPC) (opponents 01).

The oppositions were *inter alia* supported by:

D1: EP-A-0 268 982

D2: US-A-4 950 468

D3: US-A-4 976 956

D5: Extract from "Encyclopaedia of polymer science and engineering, Volume 15, Second Edition 1989 (John Wiley & Sons), pages 204, 245-249, 303

IV. In a first decision posted on 12 March 2002, the Opposition Division held that the patent as granted, despite meeting the requirements of Article 123(2) EPC, did not meet the requirements of Article 83 EPC and therefore revoked the patent. Following an appeal against that decision, the case was remitted to the Opposition Division for further prosecution by appeal decision T 396/02 of 2 August 2005 (not published in the OJ EPO).

V. The second decision of the Opposition Division posted on 7 November 2006, against which the present appeal lies, rejected the oppositions.

VI. According to the decision under appeal:

- (a) D1 disclosed cosmetic composition containing emulsion polymerised siloxanes. While the description mentioned a degree of polymerisation of suitable polysiloxanes of 3-5000 or of 10-3000 and the possibility among other options to have hydroxy groups at the terminal ends of the polymers, the exemplified emulsions comprised polysiloxanes with a degree of polymerisation of 100 and 1200 and no data about the viscosity of the emulsions and of the end products could be derived from the document. Therefore, since the generally disclosed values for the degree of polymerisation of 3000 and 5000 had not been exemplified in real embodiments and a number of further choices had to be made to come to the subject-matter of claims 1 and 5, neither the specific composition of D1 nor its general teaching anticipated the subject-matter of these claims.

- (b) D1 was the closest state of the art, since D3 which had alternatively been considered by opponents 02 disclosed conditioning compositions without emulsion polymerised siloxanes and represented a more distant prior art than D1.

Starting from D1 there were four choices to be made to come to the product as claimed in Claim 1, namely the choice of a cationic surfactant selected from cetyl trimethylammonium chloride, behenyl trimethyl ammonium chloride and mixtures thereof, of hydroxy endings for the polysiloxane,

of a degree of polymerisation of the dimethiconol greater than 2700 and of a viscosity of the same of 1-20 million cst. Similarly for the method of claim 5 the choice of generally cationic surfactants, of a molecular weight of the silicone above 200 000, of a viscosity of the silicone above 1 million cst and of a viscosity of the emulsion below 1000 cps were necessary.

While no evidence could be seen in the patent that there was any improvement over the prior art by these choices, there was likewise in the prior art no hint that such combination of features led to an alternative conditioning composition with comparable features as far as ease of dry combing or smooth feel were concerned. The teaching of D3, which concerned siloxanes of low molecular weight and viscosity, and of D2, which disclosed mechanically emulsified dimethyl siloxanes, could not provide the needed incentive.

For these reasons the composition of claim 1 and the method of claim 5 were non obvious alternatives to the compositions and methods disclosed in D1.

VII. On 27 November 2006 opponents 02 (appellants) filed a notice of appeal against the above decision, the prescribed fee being paid on the same day. In their statement setting out the grounds of appeal filed on 26 February 2007, the appellants maintained that the subject-matter of the granted claims lacked novelty and inventive step.

- VIII. By letter dated 4 September 2007 the patent proprietors (respondents) filed observations on the grounds of appeal, while maintaining the patent as granted as sole request.
- IX. In a communication sent in preparation for the oral proceedings, the Board posed a number of questions to the parties including (i) whether for a linear dimethiconol polymer according to the formula in claim 1 a direct relationship existed between the molecular weight and the viscosity, so that once the value of n was fixed, the molecular weight could be calculated and also the viscosity was established, and (ii) which limitation was implied by the product-by-process feature "emulsion polymerised polymer".
- X. Oral proceedings were held on 16 September 2009 in the absence of opponents 01, party as of right to the proceedings, who made no requests and no submissions in the current appeal proceedings.

During the oral proceedings the respondents submitted a set of 4 claims as auxiliary request, in which all method claims had been deleted and product claim 1 had been maintained as sole independent claim and amended as follows:

"1. A rinse off hair conditioning composition substantially free from anionic surfactant comprising:
(a) 0.05 to 5% by weight of cationic surfactant selected from cetyl trimethylammonium chloride,
(b) 0.01 to 10% by weight of an emulsion polymerised dimethiconol nonionic conditioning polymer having the formula:

$\text{HO-Si(CH}_3)_2\text{-O-[Si(CH}_3)_2\text{-O-]}_n\text{Si(CH}_3)_2\text{-OH}$

where n is greater than 2700, and

(c) water, wherein the viscosity of the dimethiconol lies in the range 1-20 million cst."

XI. The appellants as far as relevant to the present decision argued as follows:

(a) The disclosure of D1 as a whole led to the subject-matter of claim 1 without the need to make any choice. In particular the disclosure of a document should not be limited to its examples and decision T 396/02 (*supra*) had already clearly stated that the dimethiconols of claim 1 were disclosed in D1; their viscosity was directly correlated to their molecular weight and fell automatically into the claimed range. In addition hexadecyltrimethylammonium hydroxide and its salts were mentioned in the description and chlorides were used in the examples so that also the specific surfactants of claim 1 were unambiguously disclosed in D1.

(b) As to D2, it directly and unambiguously disclosed dimethiconols with the degree of polymerisation of claim 1. Since the composition of claim 1 did not necessarily include the emulsion resulting from an emulsion polymerisation, but only the obtained product, also D2 anticipated the subject-matter of claim 1 as granted. As to the auxiliary request, cetyl trimethylammonium chloride was such a close equivalent to the surfactants of D2 that novelty could still not be acknowledged.

- (c) As to inventive step, the skilled person, starting from D1 as the closest state of the art and trying to solve the problem of improving the properties of the products of D1 would take into account all the dimethiconols disclosed in the document. In this respect, no evidence could be found in D1 which would discourage the skilled person to use dimethiconols with a high degree of polymerisation. Moreover, the disclosure of C16 and C18 substituents both in the surfactants and in the alcohols of emulsion A and of the compositions of Tables 8 and 11 would prompt the skilled person to choose the specific surfactant of claim 1 of the auxiliary request without exercising an inventive activity.

XII. The respondents as far as relevant to the present decision argued as follows:

- (a) In decision T 396/02 (*supra*) the Board stated that the method for preparing silicones according to claim 1 of the contested patent was known from D1. This did not mean, however, that the dimethiconols of claim 1 were directly and unambiguously disclosed in D1, since they represented a selection out of the broad disclosure of D1. In particular, since the scope of D1 was to obtain stable and transparent emulsions, the skilled person would not seriously contemplate to employ dimethiconols with high degree of polymerisation. In addition, neither the specific surfactants according to claim 1, nor their specific quantity were disclosed in D1. With regard to the viscosity, while it could be acknowledged that for a linear

polymer a direct relationship existed between the molecular weight and the viscosity, in practice a certain degree of cross-linking was always present, which had an influence on the value of the viscosity.

- (b) With regard to D2, it did not disclose any dimethiconol produced by emulsion polymerisation. Since the examples in the contested patent showed the difference in ease of dry combing and smooth feel between emulsions resulting from emulsion polymerisation and mechanical emulsions, the compositions of D2 could not be considered indistinguishable from the compositions of claim 1. Moreover, dimethiconols obtained by emulsion polymerisation had a lower polydispersity than dimethiconols obtained by other processes, so that novelty had to be acknowledged. As to the auxiliary request, no disclosure of cetyl trimethylammonium chloride was present in D2, which on the contrary pointed to a specific combination of surfactants which was needed to achieve the purpose of the invention.

- (c) As stated in the contested decision, the skilled person when starting from D1 needed to make four choices to come to the subject-matter of claim 1. Since no information was available whether the properties of the claimed composition were any better than those of the products of D1, the problem to be solved had to be considered that of providing an alternative composition. While the choice of a specific surfactant out of many equivalents could be considered within the routine

activity of the skilled person, this was not the case for the selection of the specific polymer. In particular, the results in Table 8 of D1 with reference to Example 4 showed that when used in a hair conditioning composition, silicones with a degree of polymerisation of 1200 performed worse than those with a degree of polymerisation of 100 in terms of combability, so that D1 would teach away from using higher degree of polymerisation in that kind of compositions. In view of this, the selection of a degree of polymerisation above 2700 as in claim 1 would lead to a non obvious alternative to the compositions of D1, so that the presence of an inventive step should be acknowledged.

XIII. The appellants (opponents 02) requested that the decision under appeal be set aside and that the European patent be revoked.

XIV. The respondents (patent proprietors) requested that as main request the appeal be dismissed or as auxiliary request that the decision under appeal be set aside and the patent be maintained on the basis of the auxiliary request submitted at oral proceedings on 16 September 2009.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Novelty*

2.1 D2 discloses (claim 1) a hair treating composition comprising:

(a) 0.05 to 2.5% by weight of a dimethylsilicone rubber of the formula:



wherein R^1 and R^2 are methyl or hydroxy; and n is an integer of 4000 to 9000, and

(b) 0.1 to 5% by weight of a quaternary ammonium salt ingredient consisting of stearyltrimethylammonium chloride and behenyltrimethylammonium chloride in a weight ratio of stearyltrimethylammonium chloride to behenyltrimethylammonium chloride of 9:1 to 1:9.

In addition, the weight ratio of said dimethylsilicone rubber to said quaternary ammonium salt ingredient is from 1:2 to 1:10. In the examples the quantity of dimethylsilicone rubber is from 0.05 to 2% by weight and the quantity of behenyltrimethylammonium chloride ranges from 0.1 to 2.7% by weight. No example contains any anionic surfactant. Water is the main ingredient in all the exemplified compositions. While example 14 explicitly mentions a hair rinse, also all compositions of examples 1-12 were tested by dipping human hair in them, rinsing out the preparations and evaluating conditioning properties, including gloss, softness and feeling and easy combing (see column 4, lines 17-44).

2.2 In view of this unambiguous disclosure, it was not disputed that D2 anticipates a rinse off hair conditioning composition substantially free from

anionic surfactant comprising 0.05 to 5% by weight of behenyl trimethyl ammonium chloride as cationic surfactant, 0.01 to 10% by weight of a dimethiconol nonionic conditioning polymer having the formula:
$$\text{HO-Si(CH}_3)_2\text{-O-[Si(CH}_3)_2\text{-O-]}_n\text{Si(CH}_3)_2\text{-OH}$$
where n is greater than 2700, and water.

2.3 It remains therefore to be determined whether the features "emulsion polymerised" with reference to the dimethiconol polymer and "wherein the viscosity of the dimethiconol lies in the range 1-20 million cst" could distinguish the composition of claim 1 from those disclosed in D2.

2.4 The definition of the dimethiconol nonionic conditioning polymer as an "emulsion polymerised" polymer is a product-by-process definition which means that the polymer is obtainable by emulsion polymerisation.

The respondents followed two lines of argument to support the view that the product-by-process definition implies features which distinguish the claimed product from a polymer obtained by any other method, namely that emulsions resulting from emulsion polymerisation and mechanical emulsions have different conditioning properties, so that they must be different and that dimethiconols obtained by emulsion polymerisation have a lower polydispersity than dimethiconols obtained by other processes.

2.4.1 According to the respondents, the first line of argument is supported by the examples in the contested patent which show the difference in ease of dry combing

and smooth feel between emulsions resulting from emulsion polymerisation and mechanical emulsions. The respondents' arguments are based on the assumption that claim 1 relates to a composition containing an emulsion resulting from an emulsion polymerisation process, which however is not correct. The presence in the composition of an emulsion polymerised polymer as defined in claim 1 does not imply that the emulsion resulting from an emulsion polymerisation process is still present, nor even that an emulsion is present in the composition. In this respect it has to be noted that emulsion polymerisation is a typical polymerisation process, whose resulting product can be either the emulsion itself or the polymer isolated from the emulsion after polymerisation has been completed. In the latter case, the polymer is still an emulsion polymerised polymer, but it is no longer in the form of an emulsion, so that its presence in a composition does not necessarily result in the presence of an emulsion. Hence, independently of the reliability and completeness of the examples presented, the respondents' first line of argument cannot be followed by the Board.

- 2.4.2 The second line of argument has not been supported by any evidence. While emulsion polymerisation, as any polymerisation process, may produce according to the process operating conditions polymers with specific properties, such as e.g. a specific polydispersity, no evidence has been provided by the respondents that any emulsion polymerisation process necessarily results in a polydispersity different from that of polymers obtained by other processes. Moreover, claim 1 is not limited to a specific polydispersity. In the absence of

a limitation in the patent and of supporting evidence from the respondents, also the second line of argument must fail.

- 2.4.3 Since no other arguments were provided by the respondents and no evidence was present that differences existed in the properties of the polymer which were due to its method of production, the Board must conclude that the feature "emulsion polymerised" cannot confer novelty on the composition of claim 1 with respect to the disclosure of D2, even if in this document no direct information is given about the method of production of the polymer.
- 2.5 The Board also came to the conclusion that the range of viscosity of the dimethiconol of claim 1 cannot distinguish the claimed composition from the compositions of D2 for the following reasons, which conclusion was not disputed by the respondents.
- 2.5.1 As in the chemical formula of claim 1 the degree of polymerisation n is the only parameter which can be selected, once the degree of polymerisation is fixed, all intrinsic properties of the material including its viscosity are established. While the respondents argued that a certain degree of cross-linking is always present in the silicone polymer, which may have an influence on the value of the viscosity, the claim only mentions a linear dimethiconol, so that the viscosity value given therein can only refer to the viscosity of such a linear dimethiconol.
- 2.5.2 The only document on file which provides viscosity values for linear polydimethylsiloxanes is D5, which in

Figure 8, on page 248 shows the viscosity of linear trimethylsiloxy-terminated polydimethylsiloxanes as a function of their molecular weight. The data in Figure 8 show that a viscosity of 1 million cst corresponds to a molecular weight of approximately 200000 (corresponding to a degree of polymerisation of 2700) while a viscosity of 20 million cst can be extrapolated as corresponding to a molecular weight of approximately 500000 (corresponding to a degree of polymerisation of around 7000). The plot shown in Figure 8 is also valid for other end groups, including hydroxy end groups, with small differences being possible only at lower molecular weights (see page 247, full paragraph under Table 6). Furthermore, the contested patent does not contain any specific measuring method for the determination of the viscosity of the dimethiconol, so that the claims imply that any known method suitable for the determination of the parameter in question can be used (see T 396/02, *supra*, point 4.8, in particular 4.8.3) and it is well known that different methods of measurements or measurements in different conditions (e.g. at different temperatures) may give different results. It can therefore be concluded that dimethiconols with an even broader interval of degree of polymerisation than 2700 to 7000 will have a viscosity measured by at least one method falling into the claimed range of 1-20 million cst.

- 2.5.3 In view of this, it can be concluded that for at least more than half of the interval of degree of polymerisation disclosed in D2, the condition on the viscosity is implicitly met, even if no values of viscosity are explicitly mentioned in D2, so that the

claimed range of viscosity cannot distinguish the composition of claim 1 from the compositions of D2.

- 2.6 For these reasons, it is concluded that the composition according to claim 1 of the main request lacks novelty in view of the disclosure of D2.

Auxiliary request

3. *Novelty*

- 3.1 Claim 1 according to the auxiliary request differs from claim 1 as granted in that the cationic surfactant present as component (a) is specified as being cetyl trimethylammonium chloride, while behenyl trimethyl ammonium chloride and mixtures of the two surfactants have been deleted.

- 3.2 Cetyl trimethylammonium chloride is not disclosed in D2. Moreover, even assuming that this surfactant is an equivalent of behenyl trimethyl ammonium chloride, as stated by the appellants, novelty could not be put into question, since according to the jurisprudence the disclosure of a prior art document does not include equivalents of the features which are implicitly or explicitly disclosed (Case Law of the Boards of Appeal of the EPO, 5th edition 2006, I.C.2.5).

- 3.3 For these reasons, the composition according to claim 1 of the auxiliary request is novel with respect to the disclosure in D2.

- 3.4 D1 discloses (claim 2) a composition comprising a dimethylpolysiloxane microemulsion formed by the

emulsion polymerisation of dimethylpolysiloxane with low degree of polymerisation, wherein the degree of polymerisation of the microemulsion polymerised dimethylpolysiloxane is from 3 to 5000. The terminal ends of said dimethylpolysiloxane may consist among others of hydroxy groups (page 2, lines 34-35, wherein also alkoxy groups such as methoxy, ethoxy and propoxy, and trimethylsiloxy groups are mentioned). The surfactant used to form the emulsion may be a cationic surfactant, including hexadecyltrimethylammonium hydroxide (cetyltrimethylammonium hydroxide) or tallow trimethylammonium hydroxide (a mixture of different hydroxides including cetyltrimethylammonium hydroxide) as well as their salts (page 3, lines 13-18). However, many other surfactants, including anionic and nonionic surfactants and combinations of two or more types of surfactants are also disclosed (page 3, lines 2-29). Cosmetic products including hair rinses and hair conditioners (page 4, line 36) can be obtained by adding other components to the microemulsion, including in particular further quantities of surfactants, which are typically selected from the same surfactants as used for the emulsion polymerisation (page 4, lines 16-27).

- 3.5 The disclosure of the general part of the description of D1 and of the claims therefore does not anticipate the composition of claim 1 of the auxiliary request, since it only discloses the specific surfactants, the specific terminal ends and the specific degree of polymerisation either within different lists of a certain length or within broad ranges, so that it cannot be considered to disclose directly and

unambiguously at least these three features in combination.

3.6 Among the examples of D1, example 4 discloses hair conditioning compositions 1-4 (Table 8) which are tested as the hair rinses of example 1 (page 11, lines 6-8) and are therefore to be considered as rinse off hair conditioning compositions according to claim 1.

3.6.1 The compositions comprise 1% by weight of a cationic surfactant (stearyldimethylammonium chloride, *sic*). Even if an obvious error took place in the indication of the surfactant (only three out of the four substituents of the ammonium ion are indicated) and no information is available in the document about which further substituent should be meant, it was uncontested by the parties that a cationic surfactant based on ammonium chloride with at least three organic substituents is meant to be used in the hair conditioning compositions of example 4 of D1. Moreover these compositions contain 2 or 5% by weight of emulsion A (hair conditioning compositions 1 and 2) or C (hair conditioning compositions 3 and 4) as produced in examples 1 and 2. While emulsion A does not contain any anionic surfactant, emulsion C contains an anionic surfactant (dodecylbenzenesulfonic acid), however, in a quantity well under 10% by weight of the emulsion (cf. the components from which the emulsion results on page 7, lines 34-39), so that its quantity in the conditioning composition is surely below 1% by weight. All compositions of example 4 of D1 are therefore substantially free from anionic surfactant within the meaning of the patent in suit, since in paragraph [0010] it is specified that "Substantially free from anionic

surfactant means that the composition contains less than 1% of anionic surfactant". In addition emulsion A contains as a cationic surfactant tallow trimethylammonium chloride (page 4, line 50) which is a mixture of different chlorides including cetyltrimethylammonium chloride. However, no information is available to determine the quantity of cetyltrimethylammonium chloride in the composition.

- 3.6.2 The silicone of emulsion A is a trimethylsiloxy-terminated dimethylpolysiloxane having a degree of polymerisation of 100 (page 5, lines 1-2), while the one of emulsion C is a hydroxy-terminated dimethylpolysiloxane having a degree of polymerisation of 1200 (page 7, lines 44-45). Since the quantity of the reacting low degree of polymerisation dimethylpolysiloxanes in the mixtures in which the emulsion polymerisation is conducted is around 20% by weight in both cases and the hair conditioning compositions comprise 2 or 5% by weight of the emulsions, the quantity of polymerised silicone in the composition falls under the claimed range of 0.01 to 10% by weight independently of the (unspecified) conversion during polymerisation (only for an unreasonable conversion under 2% could the quantity of silicone be below the minimum value).
- 3.6.3 The hair conditioning compositions of example 4 therefore differ from the composition of claim 1 in the degree of polymerisation and either in the specific cationic surfactant (as far as emulsion C is concerned) or in the terminal end groups of the dimethylpolysiloxane and the quantity of the specific cationic surfactant (as far as emulsion A is concerned),

so that they do not anticipate the subject-matter of claim 1 of the auxiliary request. As to the viscosity of the polydimethylsiloxane, it is not considered as a further difference for the reasons discussed under point 4.3 (*infra*).

3.7 No other example of D1 comes closer to the composition of claim 1 of the auxiliary request. Since neither the general disclosure of D1, nor the specific examples anticipate the composition of claim 1 of the auxiliary request, novelty with respect to D1 must also be acknowledged.

4. *Inventive step*

4.1 D1 and D2, which have been analysed above in the assessment of novelty, are both possible candidates for the closest state of the art, since both disclose rinse off hair conditioning compositions comprising surfactants and polydimethylsiloxanes. However, while D2 focuses on a combination with a specific surfactant different from the one of claim 1, which is presented as an essential feature of the invention (see claim 1 and "Summary of the invention"), D1 concerns a much broader disclosure, which covers among the possible options all features of claim 1 of the auxiliary request as outlined above. For these reasons, D1 offers the "most promising springboard" towards the invention available to the person skilled in the art (Case Law, *supra*, I.D.3.4) and it is to be considered as the closest state of the art.

4.2 As outlined above, the hair conditioning compositions 3 and 4 of example 4 of D1, which are the most similar to

the composition of claim 1 of the auxiliary request, differ from the latter in the degree of polymerisation and in the specific cationic surfactant.

4.3 Even if D1 does not mention any value for the viscosity of the polydimethylsiloxanes, a viscosity within the range 1 to 20 million cst cannot be considered as a further difference with respect to the disclosure in D1 in addition to a limitation on the degree of polymerisation. Indeed, as analysed above (see point 2.5.1 of the Reasons), the viscosity is directly dependent on the degree of polymerisation, so that once the latter is chosen, the former is also determined. In particular if the degree of polymerisation is chosen from 2700 to at least 7000, then the viscosity necessarily belongs to the claimed range for the same reasons as in point 2.5.2 of the Reasons. Therefore, when the degree of polymerisation of the polydimethylsiloxane is considered as a difference between the compositions of example 4 of D1 and the one of claim 1, it is not necessary to consider the viscosity of the polymer as a further difference, since the choice of one implies the achievement of the other.

4.4 The problem to be solved in the application as filed from which the patent in suit was granted is presented as the provision of adequate conditioning compositions which are produced without processing difficulties (page 2, lines 1-3). However, no data are available on file to show that such a problem is solved by means of the combination of features of claim 1 of the auxiliary request with respect to the closest state of the art. In particular, no comparative data are present to show any difference in performance of the compositions when

different cationic surfactants or emulsions with polymers having a different degree of polymerisation are used. The examples and comparative examples in the application as filed consider ease of dry combing and smooth feel of the hair when dry as the most indicative attributes of conditioning benefit (page 6, lines 14-16 of the application as filed). However, there is no comparison available in terms of these properties between the compositions exemplified in D1 and those according to claim 1. In this respect the respondents acknowledged at the oral proceedings that it was not known to them whether the claimed composition behaved better, similarly or worse than the compositions of D1 in terms of conditioning properties.

4.5 In the absence of any proof of an improvement or even of equivalent properties, the problem to be solved when starting from the compositions exemplified in D1 is that of finding further rinse off hair conditioning compositions. It is underlined that the problem cannot even be formulated as that of finding alternative compositions with the same properties, since it is not known if this is the case.

4.6 The skilled person, when aiming at solving such a broad problem, would necessarily consider all variations which fall under the broad disclosure of D1 itself as possible equally valid solutions. In particular, since D1 discloses a degree of polymerisation up to 5000, preferably up to 3000 (page 2, lines 32-34 and claim 2) and cationic surfactants including hexadecyltrimethylammonium hydroxide (cetyltrimethylammonium hydroxide) or tallow trimethylammonium hydroxide (a mixture of different

hydroxides including cetyltrimethylammonium hydroxide) as well as their salts (page 3, lines 13-18), wherein in the examples organic ammonium chlorides are used as cationic surfactants (in particular tallow trimethylammonium chloride in example 1), the skilled person, when looking for further compositions, would modify any of the compositions 3 and 4 of example 4 of D1, so as to arrive at the composition of claim 1 of the auxiliary request, without exercising any inventive activity.

4.7 The Board cannot follow the argument of the respondents that document D1, despite mentioning a degree of polymerisation up to 5000, preferably up to 3000, teaches away from using high degrees of polymerisation in hair conditioning compositions, in view of the better combability shown in Table 8 when hair conditioning compositions including emulsion A (where the silicone has a degree of polymerisation of 100) are used with respect to compositions including emulsion C (where the degree of polymerisation is 1200) and in view of the desire in D1 to obtain stable and transparent emulsions.

4.7.1 Emulsions A and C differ from each other in several aspects including in addition to the degree of polymerisation, the choice of the surfactant and the terminal ends of the silicone, so that a difference in performance when they are used in hair conditioning compositions cannot be attributed to one of these differences alone. Further, both the results of compositions 1 and 2 and those of compositions 3 and 4 of example 4 are described as satisfactory and compare favourably to those of a comparative example, so that

they cannot be taken as suggesting not to use silicones falling under the broad disclosure in the document. D1 contains in this respect no information that could be read by the skilled person as discouraging the choice of a degree of polymerisation falling under the broad range 3-5000 for any of the cosmetic products disclosed therein and no evidence has been provided by the respondents that satisfactorily stable emulsions according to D1 cannot be obtained when a degree of polymerisation in the higher part of the range is chosen. In addition, the respondents themselves have not excluded that the claimed compositions are worse in terms of combability than those exemplified in D1, since no comparative data are available. In view of all these reasons, the argument of the respondents must fail.

- 4.8 For these reasons, it is concluded that the composition of claim 1 of the auxiliary request does not involve an inventive step.

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

S. Fabiani

S. Perryman