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Datasheet for the decision of 8 December 2016

Case Number: T 0906/13 - 3.3.07

Application Number: 03252202.1

Publication Number: 1358865

IPC: A61Q5/12, A61Q5/10, A61K8/898

Language of the proceedings: EN

Title of invention:
Durable hair treatment composition

Patent Proprietor:
THE PROCTER & GAMBLE COMPANY

Opponent:
Kao Germany GmbH

Relevant legal provisions:
EPC Art. 123(2), 84, 54, 56

Keyword:
Amendments - added subject-matter (no)
Claims - clarity in opposition appeal proceedings
Novelty - (yes)
Inventive step - (yes)

Decisions cited:
G 0003/14

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Case Number: T 0906/13 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 8 December 2016

Appellant: (Opponent)	Kao Germany GmbH Pfungstädter Strasse 92-100 64297 Darmstadt (DE)
Representative:	Grit, Mustafa Kao Germany GmbH Pfungstädterstrasse 92-100 64297 Darmstadt (DE)
Respondent: (Patent Proprietor)	THE PROCTER & GAMBLE COMPANY One Procter & Gamble Plaza Cincinnati, OH 45202 (US)
Representative:	Herzog, Fiesser & Partner Patentanwälte PartG mbB Isartorplatz 1 80331 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 4 March 2013 concerning maintenance of the European Patent No. 1358865 in amended form.**

Composition of the Board:

Chairman J. Riolo
Members: R. Hauss
P. Schmitz

Summary of Facts and Submissions

I. European patent No. 1 358 865 was granted on the basis of seventeen claims.

II. A notice of opposition was filed in which the patent was opposed under Articles 100(a) and (c) EPC on the grounds that the claimed subject-matter lacked novelty and inventive step and extended beyond the content of the application as filed.

III. The patent proprietor requested the rejection of the opposition and submitted two auxiliary requests.

The second auxiliary request has fourteen claims. Independent claim 1 reads as follows:

"1. Hair treatment composition in the form of an oil in water emulsion

comprising a functionalized silicone polymer having an interfacial tension (IFT) of 1 to 12 mN/m and a viscosity from 400 to 150000 mPa.s at 30°C,

wherein the functionalized silicone polymer deposits durably on hair,

and wherein said silicone polymer has a particle size greater than 2 µm,

wherein the hair treatment composition additionally comprises 0.1 to 15% based on the weight of the aqueous continuous phase of emulsifier,

wherein the emulsifier comprises a surfactant system including one or more of an anionic surfactant, cationic surfactant, amphoteric surfactant, water-soluble polymeric surfactant, water soluble silicone-containing surfactant and a non-ionic surfactant,

wherein the surfactant system comprises an amidoamine according to the formula $R_1CONH(CH_2)_mN(R_2)_2$ *wherein* R_1

is a residue of C_8 to C_{24} fatty acids, R_2 is C_1 to C_4 alkyl and m is an integer from 1 to 4

and wherein the surfactant system is capable of forming a liquid crystal structure around the silicone droplets."

Claims 2 to 13 are dependent claims. Independent claim 14 is directed to a kit incorporating the composition according to claim 1.

IV. The documents cited in the course of the opposition proceedings included the following:

D1: WO 00/45787 A1

D2: Comparative data "Functionalised silicone deposition as a function of particle size test protocol" filed during examination proceedings at the EPO on 19 November 2008

V. The appeal by the opponent (appellant) lies from the decision of the opposition division, announced on 31 January 2013 and posted on 4 March 2013, finding that the patent as amended in the form of the second auxiliary request met the requirements of the EPC.

VI. In the decision under appeal, the opposition division held that the subject-matter of claim 1 as granted (main request) extended beyond the content of the application as filed. The same objection applied to claim 1 of the first auxiliary request, but was overcome in claim 1 of the second auxiliary request.

The opposition division did not have the power to examine the issue of lack of clarity of claim 1 of the second auxiliary request in respect of combinations of features which were already present with identical wording in the claims as granted.

The subject-matter of claim 1 of the second auxiliary request was novel over the disclosure of document D1, which did not disclose the parameters interfacial tension, viscosity or particle size.

The opposed patent sought to provide a hair treatment composition with superior conditioning durability. The composition of claim 1 differed from the compositions of the closest prior art D1 in the selection of silicone polymers which were functionalised and which were required to have certain values for interfacial tension and for particle size. The data reported in the table on page 6 of the patent in suit and in document D2 showed that improved deposition of functionalised silicone polymers on hair, and improved durability of the silicone polymer deposit, could plausibly be achieved with particle sizes and interfacial tensions as defined in claim 1, across the scope claimed. The technical problem to be solved in relation to D1 was the provision of an improved hair treatment composition. Since document D1 was silent as to the influence of particle size on polymer deposition and the influence of physical parameters of the silicone polymer on conditioning durability, that document could not provide a teaching that would lead to the subject-matter of claim 1 of the second auxiliary request. The same applied to independent claim 14 of that request, which defined a hair treatment kit comprising a hair treatment composition according to claim 1.

VII. In its statement setting out the grounds of appeal, the appellant raised objections with respect to added subject-matter as well as lack of clarity, novelty and inventive step.

VIII. With the reply to the statement setting out the grounds of appeal, the patent proprietor (respondent) requested that the appeal be dismissed and filed eight sets of claims designated as main request and first to seventh auxiliary requests, the claims of the main request being identical to those of the former second auxiliary request which was regarded as allowable in the decision under appeal.

IX. In a communication issued in preparation for oral proceedings and advising the parties of the board's preliminary opinion, the board mentioned the following points:

- As the appellant's objections concerning the lack of clarity of certain passages of claim 1 of the main request were not based on amendments to the granted version, they could not be examined in opposition appeal proceedings.

- Claim 1 of the main request did not contravene Article 123(2) EPC and the claimed composition was novel over the disclosure of document D1.

- Starting from the teaching of document D1, inventive step of the composition of claim 1 had been based on the technical effects of improved silicone deposition on hair, said to be linked to particle size, and good durability of the silicone deposit on hair, said to be linked to interfacial tension and viscosity. The appellant had not put the supporting experimental data on file into question. While the appellant contended that a liquid crystal structure could not be obtained over the entire scope claimed, the board did not reach the same conclusion, and the respondent had, in any case, not relied on that feature in support of inventive step.

X. Without replying in substance to the board's preliminary opinion, the appellant subsequently withdrew its request for oral proceedings and requested that a decision be taken based on the content of the file.

XI. Oral proceedings took place on 8 December 2016, in the absence of the appellant.

XII. The appellant's arguments can be summarised as follows:

Amendments (Article 123(2) EPC)

The presence of aminoamides in the hair treatment composition was disclosed in the application as filed only in conjunction with the absence of quaternary ammonium compounds of formula $N^+R_1R_2R_3R_4X^-$ and the presence of quaternary ammonium compounds of formula $N^+R_5R_6R_7R_8X^-$, for the purpose of facilitating the formation of liquid crystals. It was, moreover, implicitly understood that the presence of amidoamines alone did not result in the formation of liquid crystals. Since the limitations regarding the two types of quaternary ammonium compounds were not included in claim 1 of the main request, its subject-matter extended beyond the content of the application as filed.

Clarity (Article 84 EPC)

The wording of claim 1 of the main request lacked clarity for three reasons:

(1) The passage "based on the weight of the aqueous continuous phase of emulsifier" had no meaning, as the emulsifier had no defined aqueous phase.

(2) It was not clear if the term "aqueous phase" only referred to water or also included water-soluble and/or water-miscible components.

(3) It was not clear from the definition of the surfactant system in the claim whether the composition contained one or two surfactants, since amidoamines could be regarded as cationic surfactants when protonated.

According to recent case law of the Boards of Appeal, any amendments to the claims of a patent could be examined for clarity.

Novelty (Articles 100(a), 52(1) and 54(2) EPC)

Formulation example C on page 17 of document D1 disclosed a composition containing the components specified in claim 1 of the main request. While D1 did not explicitly disclose the particle size (or droplet size) of the functionalised silicone, the patent in suit did not mention the droplet size in its formulation examples, either, but merely disclosed a standard manufacturing process (examples 6 to 9 in paragraph [0108]).

Inventive step (Articles 100(a), 52(1) and 56 EPC)

Example C in document D1 was the closest state of the art. Improved properties were not obtained over the entire scope of claim 1 of the main request; in particular, the mandatory components and concentrations as defined in claim 1 would not inevitably result in a liquid crystal structure (thought to be advantageous for stabilising the emulsion and thus the particle size). Since the case law of the Boards of Appeal of the EPO required that any technical effect must be achieved over the whole scope of the claim, inventive step had to be denied, since that criterion was not met.

XIII. The respondent's arguments can be summarised as follows:

Amendments (Article 123(2) EPC)

Claim 1 according to the main request resulted from a combination of claim 1 as originally filed with claims 5 to 8, 12 and an independent preferred embodiment disclosed on page 14 of the description as filed, wherein the surfactant system comprised an amidoamine.

Clarity (Article 84 EPC)

Claim 1 of the main request resulted from the combination of features of different dependent claims of the patent as granted, namely claims 5, 6 and 7. According to general practice, the clarity of amended claims derived from combinations of claims as granted could not be examined in opposition (and opposition appeal) proceedings. The amendments which had been carried out did not fall within any exception to that general practice.

Novelty (Articles 100(a), 52(1) and 54(2) EPC)

Example C in document D1 did not disclose any values for the parameters interfacial tension, viscosity or particle size of the functionalised silicone polymer called "Toshiba XF 49-B1989".

Inventive step (Articles 100(a), 52(1) and 56 EPC)

The claimed composition differed from the composition of D1 at least in the presence of a functionalised silicone polymer having an interfacial tension of 1 to 12 mN/m and a particle size greater than 2 µm.

The technical problem to be solved was the provision of a hair treatment composition providing an improved and more durable silicone deposition on hair.

The experimental data reported in the patent in suit and in document D2 showed that the technical problem was solved by the composition defined in claim 1.

Document D1 addressed a different technical problem (viz. to provide compositions with good hair-conditioning properties not requiring Quaternium-18) and did not recognise the importance of the interfacial tension and of the particle size for solving the objective technical problem.

XIV. The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

XV. The respondent (patent proprietor) requested that the appeal be dismissed, alternatively that the decision under appeal be set aside and that the patent be maintained on the basis of one of the first to seventh auxiliary requests filed with the reply to the statement setting out the grounds of appeal.

Reasons for the Decision

1. Main request - amendments (Article 123(2) EPC)

1.1 Claim 1 of the present main request is based on claim 12 as filed (which defines the particle size and, by back-reference to claims 5 to 8, the emulsion and the surfactant system), in combination with page 14, lines 4 to 11 disclosing specified amidoamines as an optional component and page 23, line 32 indicating that the viscosity is determined at 30°C.

1.2 The appellant contended that the presence of the amidoamines was disclosed in the application as filed

only in association with further technical features which were however absent from claim 1 of the present main request, and that therefore claim 1 encompassed added subject-matter. This argument cannot succeed, for the following reasons:

1.3 According to the application as filed (see page 11, bottom paragraph), it is advantageous if the surfactant system in the O/W emulsion forms a stabilising layer of lamellar liquid crystals around the silicone droplets, as this barrier film prevents coalescence between emulsion droplets.

1.3.1 The surfactants which are preferred for the formation of liquid crystals are certain fatty alcohols and fatty alcohol ethoxylates (see page 12, lines 17 to 27 of the application as filed).

1.3.2 If it is desired that the surfactant system form liquid crystals, then the surfactant system advantageously does not comprise quaternary ammonium compounds of formula $N^+R_1R_2R_3R_4X^-$, but it will advantageously comprise quaternary ammonium compounds of formula $N^+R_5R_6R_7R_8X^-$ and it may also comprise amidoamines of formula $R_1CONH(CH_2)_mN(R_2)_2$, wherein R_1 is a residue of C_8 to C_{24} fatty acids, R_2 is C_1 to C_4 alkyl and m is an integer from 1 to 4 (see pages 12 to 14 of the application as filed).

1.4 The board infers from this that the three features mentioned in point 1.3.2 (i.e. the absence of certain quaternary ammonium compounds, the presence of certain other quaternary ammonium compounds and "also" the presence of specified amidoamines) are not disclosed in association in the application as filed, but can be selected separately, since each of them is presented as

an optional advantageous embodiment and no requirement of combining them is mentioned.

In particular, and contrary to the appellant's interpretation, the application as filed does not teach that the combination of these three features is a precondition which is indispensable to the formation of liquid crystal structures.

Also contrary to the appellant's interpretation, the wording of present claim 1 does not imply that the presence of an amidoamine of the specified chemical structure results in a liquid crystal structure.

In fact, claim 1 of the present main request is explicitly restricted to surfactant systems which are capable of forming a liquid crystal structure, which necessarily implies that surfactants meeting that purpose are present (such as, for instance, those mentioned on page 12 of the application; see point 1.3.1 above). In addition to that requirement, the composition furthermore contains an amidoamine of formula $R_1CONH(CH_2)_mN(R_2)_2$. Consequently, a composition with a surfactant system not capable of forming a liquid crystal structure but comprising an amidoamine of formula $R_1CONH(CH_2)_mN(R_2)_2$ does not fall within the scope claimed.

1.5 The board concludes that the subject-matter of claim 1 of the main request meets the requirements of Article 123(2) EPC, since it is based on claim 12 as filed in combination with one selection of a preferred embodiment from the description.

2. Main request - clarity (Article 84 EPC)

2.1 According to decision G 3/14 (OJ EPO 2015, A102, Order) the claims of a patent as amended may be examined for

compliance with the requirements of Article 84 EPC only when, and to the extent that, the amendment introduces non-compliance with the EPC.

1.1 The board considers that this condition is not met, since the claim features and terms objected to by the appellant were already present in claims 1, 5 and 6 as granted.

Specifically, dependent claim 5 of the patent, which refers back to claim 1, states that the composition comprises 0.1 to 15% based on the weight of the aqueous continuous phase of emulsifier.

Claim 1 of the patent specifies that the composition contains an amidoamine according to the formula $R_1CONH(CH_2)_mN(R_2)_2$, and dependent claim 6 of the patent, which refers back to claim 5, specifies that the emulsifier comprises a surfactant system including one or more of an anionic surfactant, cationic surfactant, amphoteric surfactant, water-soluble polymeric surfactant, water soluble silicone-containing surfactant and a non-ionic surfactant.

1.2 As a consequence, the board is precluded from examining the objections which were raised by the appellant under Article 84 EPC.

2. Main request - novelty (Articles 100(a), 52(1) and 54(2) EPC)

2.1 Example composition C in document D1 was cited by the appellant against the novelty of claim 1.

2.2 In example C, document D1 discloses a composition comprising, *inter alia*, 1.3% of a TMS amodimethicone with the trade name "Toshiba XF 49-B1989", 1.5% of an amidoamine (Adogen S18V, INCI: stearamidopropyl

dimethylamine), 8% cetearyl alcohol, 3% isopropyl myristate, 2% lanolin and water at pH 4. No values for interfacial tension, viscosity and particle size of the amodimethicone are given.

2.3 Particle size

Document D1 does not disclose how its example composition was prepared. Since it cannot be plausibly assumed that a particle size greater than 2 µm will inevitably be obtained when preparing a composition according to example C of D1 by any conceivable method, the particle size as defined by its lower limit in claim 1 of the main request distinguishes the claimed composition from the composition of document D1.

The appellant's argument that the particle size is not disclosed in the formulation examples of the patent in suit has no relevance in this context, since it is the novelty of the subject-matter defined in claim 1 which has to be assessed and not the novelty of the examples.

2.4 Interfacial tension and viscosity

2.4.1 While it is disclosed in document D1 that example composition C contains a functionalised silicone polymer, viz. the "TMS amodimethicone", no explicit mention is made of any values for the interfacial tension and viscosity of that component.

2.4.2 The only additional information which is provided about the TMS amodimethicone used in the formulation examples of D1 is its trade name "Toshiba XF 49-B1989" (see page 17 of document D1, index 2). That tradename is not, however, mentioned elsewhere in document D1.

No other piece of evidence or information concerning the identity and properties of a material with the trade name "Toshiba XF 49-B1989" is on file in the

present appeal proceedings. Thus there is no basis for the assumption that the material "Toshiba XF 49-B1989" and its properties would be part of the general knowledge of the skilled person reading document D1.

In conclusion, the indication of the tradename does not provide an implicit disclosure of the viscosity and interfacial tension of the TMS amodimethicone material used in formulation example C of D1.

2.4.3 As corroborated by the data shown in paragraph [0036] of the patent in suit, not all functionalised silicone polymers have an interfacial tension of 1 to 12 mN/m and a viscosity from 400 to 150000 mPa·s. Nor is there any reason to assume that all functionalised silicone polymers which are TMS amodimethicones have those properties.

2.4.4 Without further guidance, the person skilled in the art trying to reproduce formulation example C of document D1 might try different available TMS amodimethicone materials (covered by the general teaching in D1 of "aminosilicones"), but since document D1 does not define any limiting ranges for the parameters interfacial tension and viscosity, those materials would not inevitably meet the definition of claim 1 of the present main request in respect of those parameters (see D1: claim 11 and page 6, line 15 to page 9, line 17).

2.4.5 Hence the ranges defined in present claim 1 for the interfacial tension and viscosity of the functionalised silicone polymer are further technical features distinguishing the claimed composition from the disclosure of example C of document D1.

2.5 For these reasons, the subject-matter of claim 1 of the main request is novel over the disclosure of document D1.

3. Main request - inventive step (Articles 100(a), 52(1) and 56 EPC)

3.1 The patent in suit seeks to provide hair treatment compositions that exhibit superior conditioning durability on hair.

3.2 The patent teaches that this can be achieved by the use of functionalised silicone fluids having certain parametric properties, regardless of the nature of their functional groups (paragraphs [0001], [0016] to [0020]). In particular, it teaches that functionalised silicones above a certain viscosity within a certain hydrophilicity range (measured by means of interfacial tension) interact better with hair fibres.

3.3 Document D1, which has been regarded as the closest prior art, describes hair conditioning compositions containing a combination of (a) an amine or quaternised amine, wherein the amine is preferably an amidoamine, and (b) a specific ester, preferably isopropyl myristate (see D1: claim 1; page 3, paragraph 2; page 6, line 9).

The compositions of D1 are said to have superior hair conditioning properties and may optionally contain a silicone compound or aminofunctionalised silicone compound (claims 11 to 13) and/or a cationic surfactant (claims 15, 16). D1 does not discuss silicone deposition on hair or the durability of the conditioning properties.

3.4 Example composition C of D1 comprises stearamidopropyl dimethylamine (in conformity with the definition of the amidoamine of present claim 1) and a functionalised silicone (TMS amodimethicone). As established in section 2 above, the claimed composition differs from the composition of document D1 in that it comprises a functionalised silicone polymer having an interfacial tension of 1 to 12 mN/m, a viscosity from 400 to 150000 mPa·s and a particle size greater than 2 µm.

3.5 According to the respondent, inventive step of the composition according to claim 1, having regard to document D1, is based on the technical effects of:

- improved deposition of the functionalised silicone on hair, said to be linked to particle size (based on the data reported in document D2),

- good durability of the silicone deposit on hair, said to be linked to interfacial tension (based on the data shown in table in paragraph [0036] of the patent in suit).

3.6 The appellant has not questioned the experimental results reported in the patent and in D2, according to which interfacial tension in the range defined in claim 1 of the main request leads to a good durability of the silicone deposit on hair, and functionalised silicone polymers with a particle size of more than 2 µm show improved deposition. The data in question were obtained with several different silicone polymers and droplet sizes.

3.7 The appellant argued that improved properties were not obtained over the entire scope claimed, because the effect of obtaining a liquid crystal structure (thought to be advantageous for stabilising the emulsion and thus the particle size) was not achieved over the scope

claimed. The board does not reach the same conclusion, since only embodiments are claimed wherein the surfactant system is capable of forming a liquid crystal structure around the silicone droplets (and wherein the particle size is larger than 2 µm). Moreover, the respondent has not relied on the claim feature requiring the presence of a liquid crystal structure in support of inventive step. Thus the appellant's argument is not pertinent.

3.8 Starting from the teaching of document D1, and based on the available experimental data, the technical problem is the provision of an improved hair conditioning composition.

3.9 Document D1 discloses aminosilicones as optional conditioning components. It does not discuss the deposition of functionalised silicones on hair and does not disclose any link between particle size and deposition or between interfacial tension and durability of the silicone deposit. Accordingly, the person skilled in the art would not obtain any suggestion in the teaching of document D1 to modify its compositions in accordance with claim 1 of the present main request in order to solve the technical problem of further improving the composition.

3.10 As a consequence, the subject-matter of claim 1 of the main request involves an inventive step within the meaning of Article 56 EPC.

4. The appellant has not raised any separate objections in respect of independent claim 14.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Fabiani J. Riolo

Decision electronically authenticated