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# Datasheet for the decision of 23 November 2021

**Case Number:** T 1240/19 - 3.3.07

**Application Number:** 11193242.2

**Publication Number:** 2460508

**IPC:** A61K8/34, A61K8/41, A61Q5/12, A61K8/04

**Language of the proceedings:** EN

**Title of invention:**
Hair conditioning composition having higher yield point and higher conversion rate of fatty compound to gel matrix

**Patent Proprietor:**
The Procter & Gamble Company

**Opponent:**
Henkel AG & Co. KGaA

**Headword:**
Hair conditioning composition having higher yield point and higher conversion rate of fatty compound to gel matrix/The Procter & Gamble Company

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



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It can be changed at any time and without notice

**Keyword:**
Admission of a document (Yes)
Main request - Inventive step (No)
Admission of auxiliary requests 1-4 (Yes)
Auxiliary requests 1-4 - Inventive step (No)
Admission of auxiliary requests 5 and 6 (No)

**Decisions cited:**
T 1127/10

**Catchword:**


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**Case Number: T 1240/19 - 3.3.07**

# D E C I S I O N
# of Technical Board of Appeal 3.3.07
# of 23 November 2021

| | |
|---|---|
| **Appellant:** (Opponent) | Henkel AG & Co. KGaA<br>Henkelstrasse 67<br>40589 Düsseldorf (DE) |
| **Representative:** | dompatent von Kreisler Selting Werner -<br>Partnerschaft von Patent- und Rechtsanwälten mbB<br>Deichmannhaus am Dom<br>Bahnhofsvorplatz 1<br>50667 Köln (DE) |
| **Respondent:** (Patent Proprietor) | The Procter & Gamble Company<br>One Procter & Gamble Plaza<br>Cincinnati, OH 45202 (US) |
| **Representative:** | Mathys & Squire<br>The Shard<br>32 London Bridge Street<br>London SE1 9SG (GB) |
| **Decision under appeal:** | **Decision of the Opposition Division of the European Patent Office posted on 19 February 2019 rejecting the opposition filed against European patent No. 2460508 pursuant to Article 101(2) EPC.** |

**Composition of the Board:**

| | |
|---|---|
| **Chairman** | E. Duval |
| **Members:** | D. Boulois |
| | K. Kerber-Zubrzycka |

## Summary of Facts and Submissions

I. European patent No. 2 460 508 was granted on the basis of a set of 14 claims.

Independent claim 1 as granted read as follows:

"1. A method of manufacturing a hair conditioning composition,
wherein the composition comprises a cationic surfactant, a high melting point fatty compound having a melting point of 25°C or higher, and an aqueous carrier;
wherein a total amount of the cationic surfactant and the high melting point fatty compound is from 7.0% to 15% by weight of the composition;
wherein the composition comprises from 30% to 90% water by weight of the composition;
wherein the method comprises the steps:
(1) preparing a premix (oil phase) comprising the cationic surfactants and the high melting point fatty compounds, wherein the temperature of the premix is higher than a melting point of the high melting point fatty compounds; and
(2) preparing an aqueous carrier (aqueous phase), wherein the temperature of the aqueous carrier is below the melting point of the high melting point fatty compounds; and
(3) mixing the premix with the aqueous carrier and forming gel matrix;
wherein the mixing step (3) comprises the steps:
(3-1) feeding either of the oil phase or the aqueous phase into a high shear field having an energy density of $1.0 \times 10^2$ J/$m^3$ or more;

(3-2) feeding the other phase directly to the field; and
(3-3) forming an emulsion."

II. An opposition was filed under the grounds that the subject-matter of the granted patent lacked inventive step, was not sufficiently disclosed, and extended beyond the content of the application as filed.

III. The present appeal lies from the decision of the opposition division to reject the opposition.

IV. The documents cited during the opposition proceedings included the following:
D1: WO 2006/044209 A2
D2: WO 00/01474 Al
D3: Stefan Schulz, Gerhard Wagner, Joachim Ulrich, Chemical Engineer Technology (74) 7/2002, S.901-909, Review article "High pressure homogenization as a process for the production of emulsions",
D4: Information on Cetyl Hydroxyethylcellulose
D5: US 2007/298004 Al
D6: WO 01/068039 A2
D7: WO 01/068041 A2
D8: WO 2009/158440 A2
D9: Data submitted by the Proprietor during first instance proceedings
D10: WO 2012/170595 A2
Dll: Response to the European Search Opinion " filed by the Proprietor during prosecution
D12: Grundlagen und Rezepturen der Kosmetika", Schrader, Huthig Buch Verlag GmbH, 1989, pages 422-423 and 906-907.

V. According to the decision under appeal, D12 was not admitted into the opposition proceedings, since late filed and not *prima facie* relevant.

The claimed invention was sufficiently disclosed.

As regards inventive step, D1 was considered to represent the closest prior art. The technical problem was the provision of a manufacturing process of a gel-matrix based hair conditioning composition which provided an improved conversion of high melting point fatty compounds to gel matrix and improved conditioning properties. The opponent had not proven convincingly that D3 cast doubts on the presence of an improved effect of compositions that are produced using energy densities over the entire claimed range in a direct-injection homogenizer. Since there was no hint in the prior art documents that such an improved effect could have been expected for hair conditioning compositions, the solution was not obvious and the claimed subject-matter was inventive.

VI. The opponent (hereinafter the appellant) filed an appeal against said decision.

VII. With its reply to the statement of grounds of appeal dated 14 November 2019, the patent proprietor (hereinafter the respondent) filed auxiliary requests 1-4.

VIII. The subject-matter of claim 1 of the auxiliary requests read as follows, the difference with respect to the main request being indicated in **bold**.

Auxiliary request 1

1. A method of manufacturing a hair conditioning composition,
wherein the composition comprises a cationic surfactant, a high melting point fatty compound having a melting point of 25°C or higher, and an aqueous carrier;
**wherein the high melting point fatty compound is selected from the group of cetyl alcohol, stearyl alcohol, and mixtures thereof;**
wherein a total amount of ~~**the-**~~cationic surfactant**s** and ~~**the-**~~high melting point fatty compound**s** is from 7.0% to 15% by weight of the composition;
wherein the composition comprises from 30% to 90% water by weight of the composition;
wherein the method comprises the steps:..."

Auxiliary request 2

"1. A method of manufacturing a hair conditioning composition,
wherein the composition comprises a cationic surfactant, a high melting point fatty compound having a melting point of 25°C or higher, and an aqueous carrier;
wherein a total amount of the cationic surfactant and the high melting point fatty compound is from 7.0% to 15% by weight of the composition;
wherein the composition comprises from ~~**30**~~ **80%** to 90% water by weight of the composition;
wherein the method comprises the steps:..."

Auxiliary request 3

"1. A method of manufacturing a hair conditioning composition,

wherein the composition comprises a cationic surfactant, a high melting point fatty compound having a melting point of 25°C or higher, and an aqueous carrier;
**wherein the cationic surfactant is behenyl trimethyl ammonium chloride, methyl sulfate or ethyl sulfate;**
wherein a total amount of ~~**the-**~~cationic surfactants and ~~**the-**~~high melting point fatty compound**s** is from 7.0% to 15% by weight of the composition;
wherein the composition comprises from 30% to 90% water by weight of the composition;
wherein the method comprises the steps:..."

Auxiliary request 4

"1. A method of manufacturing a hair conditioning composition,
wherein the composition comprises a cationic surfactant, a high melting point fatty compound having a melting point of 25°C or higher, and an aqueous carrier;
**wherein the cationic surfactant is behenyl trimethyl ammonium chloride, methyl sulfate or ethyl sulfate;**
**wherein the high melting point fatty compound is selected from the group of cetyl alcohol, stearyl alcohol, and mixtures thereof;**
wherein a total amount of ~~**the-**~~cationic surfactants and ~~**the-**~~high melting point fatty compound**s** is from 7.0% to 15% by weight of the composition;
wherein the composition comprises from ~~**30**~~ **80**% to 90% water by weight of the composition;
wherein the method comprises the steps:..."

IX. A communication from the Board, dated 22 October 2020, was sent to the parties. In it, the Board expressed its preliminary opinion that *inter alia* the main request

did not appear to be inventive, and that the auxiliary requests did not provide a further distinguishing feature.

X. With a letter dated 11 May 2021, the respondent submitted auxiliary requests 5 and 6.

The subject-matter of claim 1 of the auxiliary requests 5 and 6 read as follows, the difference with respect to the main request being indicated in **bold.**

Auxiliary request 5

"1. A method of manufacturing a hair conditioning composition,
wherein the composition comprises a cationic surfactant, a high melting point fatty compound having a melting point of 25°C or higher, and an aqueous carrier;
**wherein the cationic surfactant is behenyl trimethyl ammonium chloride, methyl sulfate or ethyl sulfate;**
**wherein the high melting point fatty compound is selected from the group of cetyl alcohol, stearyl alcohol, and mixtures thereof;**
wherein a total amount of ~~**the**~~ cationic surfactants and ~~**the**~~ high melting point fatty compound**s** is from 7.0% to 15% by weight of the composition;
wherein the composition comprises from ~~**30**~~ **80**% to 90% water by weight of the composition;
wherein the method comprises the steps:
(1) preparing a premix (oil phase) comprising the cationic surfactants and the high melting point fatty compounds, wherein the temperature of the premix is higher than a melting point of the high melting point fatty compounds; and

(2) preparing an aqueous carrier (aqueous phase), wherein the temperature of the aqueous carrier is below the melting point of the high melting point fatty compounds; and
(3) mixing the premix with the aqueous carrier and forming gel matrix;
wherein the mixing step (3) comprises the steps:
(3-1) feeding either of the oil phase or the aqueous phase into a high shear field having an energy density of $1.0x10^2$ $J/m^3$ or more;
(3-2) feeding the other phase directly to the field; and
(3-3) forming an emulsion
**wherein the premix and the aqueous carrier are mixed by using a high shear homogenizer being a direct injection rotor-stator homogenizer."**

Auxiliary request 6

"1. A method of manufacturing a hair conditioning composition,
wherein the composition comprises a cationic surfactant, a high melting point fatty compound having a melting point of 25°C or higher, and an aqueous carrier;
**wherein the cationic surfactant is behenyl trimethyl ammonium chloride, methyl sulfate or ethyl sulfate;**
**wherein the high melting point fatty compound is selected from the group of cetyl alcohol, stearyl alcohol, and mixtures thereof;**
wherein a total amount of ~~**the-**~~cationic surfactants and ~~**the-**~~high melting point fatty compound**s** is from 7.0% to 15% by weight of the composition;
wherein the composition comprises from ~~**30**~~ **80**% to 90% water by weight of the composition;
wherein the method comprises the steps:

(1) preparing a premix (oil phase) comprising the cationic surfactants and the high melting point fatty compounds, wherein the temperature of the premix is higher than a melting point of the high melting point fatty compounds; and
(2) preparing an aqueous carrier (aqueous phase), wherein the temperature of the aqueous carrier is below the melting point of the high melting point fatty compounds; and
(3) mixing the premix with the aqueous carrier and forming gel matrix;
wherein the mixing step (3) comprises the steps:
(3-1) feeding either of the oil phase or the aqueous phase into a high shear field having an energy density of ~~**$1.0x10^2$ J/$m^3$ or more**~~ **from $1.0x10^4$ J/$m^3$ to $1.0x10^7$ J/$m^3$**;
(3-2) feeding the other phase directly to the field; and
(3-3) forming an emulsion
**wherein the premix and the aqueous carrier are mixed by using a high shear homogenizer being a direct injection rotor-stator homogenizer."**

XI. Oral proceedings took place on 23 November 2021.

XII. The arguments of the appellant may be summarised as follows:

Admission of document D12

D12 was submitted during opposition proceedings after the deadline for filing written submissions had passed. The appellant only became aware of the document at that point in the procedure, and submitted it on the date it became aware of it. So D12 was filed as early as possible during first instance. The document provided

evidence of the common general knowledge in relation to one of the distinguishing features over D1, i.e. the premix with a cationic surfactant.

Main request - Inventive step

The appellant agreed with the opposition division with regard to the choice of D1 as closest prior art and the distinguishing feature. Neither the examples of the patent, nor D8 nor D9 could support the alleged advantages across the scope of the claim. The objective technical problem was therefore to provide an alternative manufacturing method for producing hair conditioning compositions. The skilled person simply had to apply the hot/cold process disclosed in D2 to the ingredients of D1 and make a binary choice in relation to the cationic surfactant, to include it in the oil premix and not in the aqueous phase. D1 itself and the skilled person's common general knowledge would have resulted in the choice of the cationic surfactant being present in the oily premix. The subject-matter of claim 1 of the contested patent was not inventive.

Auxiliary requests 1-4 - Admission into the appeal proceedings

None of these requests were substantiated about inventive step, and they should not have been admitted.

Auxiliary requests 1-4 Inventive step

These requests were not inventive for the same reasons as the main request.

Admission of auxiliary requests 5 and 6

These requests were late-filed, and were *prima facie* not suitable for overcoming the objections of lack of inventive step.

XIII. The arguments of the respondent may be summarised as follows:

Admission of document D12

The opposition division's reasons for not admitting D12 were not addressed by the appellant and document D12 should not be admitted into the appeal proceedings for this reason alone.

Moreover this document was submitted after the deadline which had been set under Rule 116 EPC and was therefore clearly late-filed. The opposition division concluded correctly that document D12 should not be admitted into the proceedings, because it was not *prima facie* relevant.

Main request - Inventive step

D1 was the closest prior art and the claimed method differed from the method of D1 at least by virtue of the specific method steps recited in claim 1. Thus, the objective technical problem could be formulated as the provision of a method of manufacturing a gel matrix-based hair conditioning composition which provided for improved conversion of high melting point fatty compounds to gel matrix and improved conditioning properties.

It was credible from the data presented in the examples that the claimed method provided for an improved conversion rate and improved conditioning properties as

compared with the method of D1. The results presented in D8 and D9 further demonstrated that the claimed method provided for an improved conversion rate and improved conditioning properties as compared with the method of D1. In sum, it was credible that the claimed method of manufacture provided for improved conversion of high melting point fatty compounds to gel matrix and improved conditioning properties. The objective technical problem was solved.

The skilled person would not have known what effect using a process as disclosed in document D2 would have on the yield and d-spacing of the gel matrix. Consequently, it could not be said that a skilled person would have found it obvious to use a method as disclosed in D2 to produce the compositions disclosed in D1. Furthermore, document D2 consistently taught that the surfactant should be introduced in the aqueous phase, before the "phase to be homogenized". The claimed solution was not obvious.

Admission of auxiliary requests 1-4 into the appeal proceedings

These requests were already filed during the opposition proceedings and filed again in response to the grounds of appeal. They were a direct response to the objections of lack of inventive step.

Auxiliary requests 1-4 - Inventive step

The subject-matter of these claims was directly related to the comparative tests D9, which was a clear evidence of the presence of a technical effect and an inventive step.

Admission of auxiliary requests 5 and 6

These requests were filed in response to some points or comments made by the Board in its communication, such as relating to the type of homogenizer which was used, or the energy density values; this corresponded to an exceptional circumstance. The subject-matter was furthermore present in the claims as originally filed.

XIV. Requests

The appellant requested that the decision under appeal be set aside and that the patent be revoked. The appellant requested to admit document D12 and not to admit auxiliary requests 1-4 and 5-6 into the proceedings.

The respondent requested that the appeal be dismissed, alternatively that the decision under appeal be set aside and the patent be maintained according to one of the sets of claims filed as auxiliary requests 1-4 with the letter of 14 November 2019 or as auxiliary requests 5-6 filed with letter of 11 May 2021. The respondent (patent proprietor) requested that document D12 not be admitted into the appeal proceedings.

## Reasons for the Decision

1. Admission of document D12 into the appeal proceedings

1.1 D12 is a common general knowledge document which teaches that lipophilic ingredients are formulated in the oily phase and hydrophilic ingredients in the aqueous phase, and also states that the overall properties of the ingredients used and the specific process applied for emulsification are crucial.

1.2 The document D12 was not admitted by the opposition division in the proceedings, because it was late filed, i.e. a few days before the oral proceedings, and was considered to be *prima facie* not relevant for the assessment of inventive step, since it did not specifically mention cationic surfactants.

The document D12 was resubmitted together with the statement of grounds of appeal which forms the basis of the appeal procedure (Article 12(1) RPBA 2007).

1.3 D12 represents common general knowledge and was filed by the appellant during the opposition proceedings to show that the specific preparation of the premix as claimed was obvious at the time of filing. It was filed in answer to the summons of the opposition division which mentioned that the formation of a premix could not be derived from document D2 and this point was repeated in the decision of the opposition division with regard to obviousness (see point 5.6 of the decision). The opposition division stated in particular therein that "*all distinguishing features can be derived from D2, except for forming a premix of oil and cationic surfactant*".

In its statement of grounds of appeal, the appellant argued again that *"D12 provides evidence of common general knowledge in relation to one of the distinguishing features over D1 (and the only distinguishing feature that is not explicitly derivable from D2), so it is highly relevant to the opposition/ appeal*".

1.4 In view of the nature of the document D12, namely that it is evidence of common general knowledge, and that

this document might be a response to a question relating to the obviousness of the claimed solution which is still pending and crucial in the appeal proceedings, whatever the outcome of the discussion as to the obviousness of the solution might be, the Board considers that a more thorough discussion on its content is necessary when assessing inventive step.

For the reasons discussed above, the disclosure of document D12 might have an impact on the patentability, either negative or positive, of the pending requests, and might facilitate a decision.

Moreover, the introduction of this document does not open a new line of argumentation but closes a gap underlined in the decision of the opposition division and thus is in reply thereto.

Under such circumstances, the Board considers that the need to assess the validity of the patent in suit with respect to this document must prevail. In view of the above considerations, the Board in the exercise of its discretion decides to admit document D12 into the appeal proceedings (Article 12(4) 2007).

2. Main request - Inventive step

2.1 The present invention relates to a method of manufacturing of hair conditioning composition. The compositions and the method of the present invention provide improved conditioning benefits. The compositions made by the method of the invention must have a conversion rate of the high melting point fatty acid compound to a gel matrix in the range of 90 to 100% and a yield point of 33 Pa or more, in view of

providing wet and dry conditioning benefits (see par. [0023] and [0028] of the specification).

2.2 D1 was considered to represent the closest prior art by all parties.

D1 discloses a method of manufacturing hair conditioning compositions, wherein a cationic surfactant, a high melting point fatty compound and the aqueous carrier form a lamellar gel matrix; said compositions must have a yield stress value of 30 Pa or more (see page 1, lines 6-12, and page 4), which is similar to the compositions obtained by the claimed process of the contested patent, and a d-spacing of 33 nm or less (see D1, page 6).

Examples 1-18 of D1 disclose the preparation of compositions by the addition of cationic surfactants and high melting point fatty compound to water, heating at 80°C, cooling down to 55°C and further inclusion of the remaining components, before cooling down (see p. 25, l. 1-9). The hair conditioning compositions of examples 1, 3-9, 11, and 14 comprise a cationic surfactant, high melting point fatty compounds having a melting point of 25°C or higher, and an aqueous carrier, all of them in the concentrations as claimed in claim 1 of the main request. The parameter measurement of the composition of example 5 gives a yield value of 45 Pa and a D-spacing value of 22 nm.

In claim 1 of the patent in suit, the method comprises the following steps, **none of said steps being described in D1**, except the formation of an emulsion (3-3):
(1) preparing a premix (oil phase) comprising the cationic surfactants and the high melting point fatty compounds, wherein the temperature of the premix is

higher than a melting point of the high melting point fatty compounds; and
(2) preparing an aqueous carrier (aqueous phase), wherein the temperature of the aqueous carrier is below the melting point of the high melting point fatty compounds; and
(3) mixing the premix with the aqueous carrier and forming gel matrix; wherein the mixing step (3) comprises the steps:
(3-1) feeding either of the oil phase or the aqueous phase into a high shear field having an energy density of $1.0x10^2$ $J/m^3$ or more;
(3-2) feeding the other phase directly to the field;
(3-3) forming an emulsion.

2.3 The problem as defined by the respondent is the provision of a method providing an improved conversion rate and improved conditioning properties.

According to the appellant, the problem is the provision of an alternative manufacturing method for producing hair conditioning compositions.

2.4 The solution to any of these problems is a manufacturing method comprising in particular the steps (1)-(3) and (3-1) to (3-2).

2.5 It has to be investigated whether there is sufficient evidence supporting the effect alleged by the respondent, namely an improved conversion rate and improved conditioning properties.

The respondent relies on the examples of the contested patent and on the experiments of document D9 to prove the existence of an effect, namely improved conditioning properties, while the appellant mentioned

document D8 in support to its argument as to the absence of any technical effect.

2.5.1 The examples of the contested patent show a comparison between compositions prepared by the claimed manufacturing process and compositions prepared by unspecified "conventional methods". Examples 1-4 disclose the preparation of compositions according to the claimed process through the use of a direct injection rotor-stator homogenizer wherein the premix is injected to a high shear field having an energy density of from $1.0x10^4$ J/$m^3$ to $1.0x10^7$ J/$m^3$ (see par. [0076] of the specification). All of the obtained compositions of examples 1-4 show a yield point over 33 Pa and a 100% conversion rate of the high melting point fatty compounds to gel matrix.

2.5.2 D9 provides a direct comparison between the claimed process and a process according to D1. The manufacturing parameters used are given in paragraph [0076] and [0077] of the contested patent. The energy density parameter is therefore comprised between $1.0x10^4$ J/$m^3$ and $1.0x10^7$ J/$m^3$, as given in paragraph [0076], without precise details as to the exact energy density used.

The results of the study are presented in the Table below and show indeed a difference with regard to the obtained Yield point, D-spacing, and conversion rate, as well as an improvement with regard to the conversion rate and the conditioning effect:

| Property | Manufacturing Method | |
|---|---|---|
| | Claimed method | Method of D1 |
| Yield Point (Pa) | 47 | 32 |
| D-spacing (nm) | > 50 | 32 |
| Conversion rate (%) | 100 | < 90 |
| Wet conditioning before rinsing | A | C |
| Wet conditioning after rinsing | A | C |

2.5.3 The board notes however that the examples of the patent and of the experiments of D9 have all been prepared with a mixing step through an energy density comprised between $1.0x10^4$ J/m$^3$ and $1.0x10^7$ J/m$^3$, whereas the method of claim 1 relates to a mixing step operated at an energy density of $1.0x10^2$ J/m$^3$ or more. The mixing energy used in D9 or in the examples of the contested patent is therefore 100 fold higher than the claimed lower range limit of $1.0x10^2$ J/m$^3$, and is also very remote therefrom.

In view in particular of this difference between the claimed lower range limit of claimed energy density of $1.0x10^2$ J/m$^3$ and the minimal energy density of $1.0x10^4$ J/m$^3$ used in the experiments of the patent and of D9, it is not credible that the experimental results of the contested patent and of D9 can be extrapolated to the whole scope of claim 1. When performing a comparison with a prior art on the basis of a claimed range constituting a distinguishing feature over said prior art, here the range of the claimed energy density, the comparison must be carried out as close as possible from the claimed range limit(s) to show that the alleged technical effect is achieved over the whole scope of the claim.

These comparative tests are therefore not able to demonstrate credibly that the technical advantages of the claimed process vis-à-vis the closest state of the

art are obtained over the entire scope of claim 1, in particular over the lower range of the claimed energy density of of $1.0x10^2$ J/$m^3$ (see for instance T 1127/10 point 2.5.3).

The respondent contended that the above technical effects were caused by the use of a high shear field and were not limited to a specific energy range. However, the respondent did not produce any evidence in support of this allegation.

2.5.4 Moreover, the appellant also cited D8 to show that the properties alleged by the respondent cannot be achieved over the whole scope of claim 1. Example 3 of D8 shows the preparation of a conditioning composition comprising a cationic surfactant, high melting point fatty compounds and water in the same proportions as claimed in claim 1 of the main request, and very close to the composition of example 1 of the contested patent, differing only therefrom in the amounts of aminosilicone and isopropanol. The composition of example 3 is prepared with the process according to claim 1 and mixed with the same energy density comprised between $1.0x10^4$ J/$m^3$ and $1.0x10^7$ J/$m^3$, but provides a yield point of only 25 Pa, which is inferior to the minimum value of 33 Pa presented in the contested patent as required for providing improved wet conditioning benefits (see contested patent, par. [0028]). In view of this disclosure, it is clearly shown that it is not credible that the alleged advantages on conditioning can be systematically achieved by the compositions obtained via the claimed process.

2.5.5 In the absence of evidence or of a technical argumentation establishing a minimum plausibility as to

the existence of an improvement, the technical problem must be reformulated as defined by the appellant, namely in the form of the provision of an alternative manufacturing method for producing hair conditioning compositions.

2.6 In view of the information found at least in the examples of the contested patent, the board is convinced that the problem has been credibly solved.

2.7 The question remaining is whether the skilled person, starting from the teaching of D1, would arrive at the subject-matter of claim 1 of the main request in an obvious manner in order to solve the problem posed. Since the problem consists in the provision of an alternative composition, it would be sufficient that there is a pointer in the prior art for the claimed solution, or that said solution results from the knowledge and competence a skilled person must be assumed to have, such as a routine or standard modification, to conclude to a lack of inventive step.

The appellant cited D2 and D12 to show that the claimed solution is obvious.

2.7.1 D2 provides a general teaching as to a hot/cold process for making emulsions or suspensions. Claim 1 of D2 covers a process using a rotor/stator homogenizer and the mixture therein of a first phase with a second insoluble phase which can be a molten waxy phase as claimed in dependent claim 6. Said waxy phase can comprise fatty alcohols (see D2, pages 4-5).

D2 describes on page 12 the manufacture of a hair cream by the mixing of a water phase and a molten lipid phase. Example 2 shows the preparation of an specific

emulsion comprising a cationic surfactant, cetearyl alcohol (melting point 50°C) and water; the aqueous phase comprising the cationic surfactant is mixed to a oil phase comprising cetearyl alcohol heated at 60°C. The mixing step is done in a direct injection rotor-stator homogenizer disclosure. Hence, the disclosure of example 2 differs from the claimed solution only in that the cationic surfactant is in the aqueous phase, instead of the oil phase as claimed in claim 1 of the main request, and that the energy density is not given.

With regard to the energy density, it appears however normal and usual to operate a rotor-stator homogenizer at a energy density levels comprised between $1x10^5$ and $1x10^7$ $J/m^3$ , as explicitly shown in Figure 3 of D3. Even if not explicitly given in D2, the skilled person would therefore have concluded that the energy density levels were similar to those claimed.

With regard to the presence of the cationic surfactant in the oil phase, D12 is a common general knowledge document relating to the basic principles for the formation of cosmetic emulsions, which states on pages 422-423 the following (translated from the German language):
"*A cosmetic emulsion is generally composed of the following constituents:*
*1. the fat phase, for which numerous raw materials can be used as described above. Generally this includes the emulsifier or emulsifiers, one or more consistency regulators, the oil or oil components, one or more oil-soluble preservatives and, if necessary, an antioxidant.*
*2. the water phase, consisting of the water content, which can be up to 85%, in the case of liquid emulsions*

*up to 95%, the water-soluble preservative, optionally the humectant and thickener,*
*3. the remaining components, consisting of e.g.:*
*the active ingredients,*
*the perfume oil*
*if necessary, the pigments and dyes.*"

Said passage highlights therefore that it was known that the surfactants may be incorporated in the fatty phase of an emulsion. Consequently, the premix (1) of a cationic surfactant with the high melting point fatty compound is a known alternative.

2.7.2 In view of the disclosure of documents D2 and D12, it appears therefore that the claimed process comprising the claimed steps (1)-(3) and (3-1)-(3-3) was a known alternative.

2.8 Consequently, the claimed solution is obvious in view of D1 combined with D2 and D12, and the main request does not meet the requirements of Article 56 EPC.

3. Admission of auxiliary requests 1-4 into the appeal proceedings

These requests were filed in response to the statement of grounds of appeal, at the earliest stage of the appeals proceedings, and were already presented in the opposition proceedings.

The requests contain limitations intended to reflect the comparative experiments provided in the opposition proceedings. The reply to the statement of grounds of appeal substantiated why these requests would meet the requirements of inventive step.

Consequently, there are no reasons to not admit auxiliary request 1-4 into the appeal proceedings (Article 12(4) 2007).

4. Auxiliary requests 1-4 - Inventive step

In comparison to claim 1 of the main request, the subject-matter of auxiliary requests 1-4 has been amended as follows:
- claim 1 of auxiliary request 1 has been restricted to specific high melting point fatty compounds, namely **"wherein the high melting point fatty compound is selected from the group of cetyl alcohol, stearyl alcohol, and mixtures thereof"**;
- claim 1 of auxiliary request 2 has been amended by the amount of water, namely **"comprises from 80% to 90% water by weight"**;
- in claim 1 of auxiliary request 3, the nature of the cationic surfactant has been specified, i.e. "w**herein the cationic surfactant is behenyl trimethyl ammonium chloride, methyl sulfate or ethyl sulfate**;"
- claim 1 of auxiliary request 4 comprises all amendment brought in the previous request, with regard to the nature of the high melting point fatty compounds, the cationic surfactant and the amount of water.

Mixtures of cetyl alcohol and stearyl alcohol are present in all examples of D1, while behenyl trimethyl ammonium methyl sulfate is the exemplary cationic surfactant in examples 1-5, 7 and 8 of D1. Moreover, all examples of D1 comprise water in an amount comprised between 80% and 90% by weight.

Hence, these features do not constitute further distinguishing features over D1 and have no impact on

the assessment of inventive step. Consequently, auxiliary requests 1-4 do not meet the requirements of Article 56 EPC for the same reasons as the main request.

5. Admission of auxiliary requests 5 and 6 into the appeal proceedings

5.1 Auxiliary requests 5 and 6 were filed on 11 May 2021, hence after notification of the summons to the oral proceedings, issued on 16 July 2020.

The subject-matter of claim 1 of auxiliary request 5 is the same as for auxiliary request 4, with the specification of the cationic surfactant and the high melting point fatty compound, except the introduction of following supplementary feature, namely "*wherein the premix and the aqueous carrier are mixed by using a high shear homogenizer being a direct injection rotor-stator homogenizer*". Said subject-matter originates respectively from dependent granted claims 11, 12 and 9.

The claims of auxiliary request 6 are the same as those of auxiliary request 5, except that claim 1 has been further amended to specify that the energy density of the high shear field is from $1.0x10^4$ J/$m^3$ to $1.0x10^7$ J/$m^3$. A basis for this amendment is to be found in the description of the application on page 18, lines 12-14.

5.2 According to the appellant, auxiliary requests 5 and 6 have been filed at this stage of the appeal proceedings, because they address an objection or comment raised for the first time by the Board in its communication dated 22 October 2020. In particular, the Board commented in its communication that "t*he examples*

*of the contested patent and of the experimental report use a specific mixing device, namely a direct-injection rotor stator homogenizer, which is also not claimed in claim 1 of the contested patent*", and goes on to reach the preliminary opinion that "*an improvement has not been shown for the whole scope of the main request*". This objection regarding the scope of the claims had not been raised by the appellant, and auxiliary requests 5 and 6, which address this objection by limiting the claims to the use of a direct injection rotor-stator homogenizer either with or without the energy density range at which such a homogenizer is used in the examples, are clearly suitable for addressing the Board's objection.

5.3 According to Article 13(2) RPBA 2020, any amendment to a party's case after notification of a summons to oral proceedings shall, in principle, not be taken in account, unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned. Such exceptional circumstances might reside in objections formulated for the first time in the provisional opinion of the Board.

5.4 In the present case, the Board indeed questioned in its communication whether the results of the experiments of the contested patent and of D9 could be extrapolated to the whole scope of claim 1, in view of the level of energy density used in said examples, which was 100 times higher than the lowest value of the claimed range of energy density. In this context, the Board pointed out furthermore that the examples of the contested patent and of D9 used a mixing device which, according to the disclosure of D3 could not be used at the claimed lowest value of energy density.

These points were however not new, since they were discussed during the opposition proceedings, and reported explicitly in the decision of the opposition division (see point 5.3). The decision mentions in particular that, according to D3, "*the apparatus that is typically used, also in D2 (Becomix homogenizer, which is the same as used in the examples of the patent in suit), appears to work with much higher energy density*". The opposition division however decided in favour of the respondent, since "*the opponent has not provided any data to prove that the improved hair conditioning effects are not achieved when using a process with low energy densities down to* $1.0x10^2$ $J/m^3$*, as encompassed in claim 1 of the patent in suit*".

The same points were explicitly raised again by the appellant in its statement of grounds of appeal which consistently argued that it did not agree that the allegedly advantageous effects of the claimed method were credibly supported across the full scope of the claims, in particular in view of the experiments D9. It argued again that the effects demonstrated by the higher energy density process are not achievable across the full scope of the claim. Moreover, it also argued that, in view of D3, only high energy methods were usable to produce emulsions: "*we are unable to carry out such an experiment due to the lack of sufficiency in terms of how to operate a direct-injection method at low energy densities to form an emulsion*" (see points 5.2.2. and 6.2.1.-6.2.3 of the statement of grounds of appeal).

5.5 Consequently, the Board did not raise a new objection or a new point in its communication. Its reference to the mixing device reflects furthermore the arguments of the appellant, and cannot be seen as an invitation to

incorporate in claim 1 the type of mixing device or a new range of energy density. There are therefore no exceptional circumstances justifying the filing of new requests at such a late stage of the appeal proceedings.

Moreover, as also argued by the appellant, it is doubtful whether the amendments brought to claim 1 of auxiliary requests 5 and 6, namely the type of mixing device and a restricted range of energy density, would have solved the issue on inventive step, in view of the disclosure of document D2 which relates to the same type of mixing device and D3 which shows the energy density provided by said devices.

Consequently, the Board decides to not admit auxiliary requests 5 and 6 into the appeal proceedings (Article 13(2) RPBA 2020).

**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:

B. Atienza Vivancos E. Duval

Decision electronically authenticated