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**Datasheet for the decision  
of 18 April 2023**

**Case Number:** T 1486/20 - 3.3.07

**Application Number:** 13715708.7

**Publication Number:** 2852375

**IPC:** A61K8/365, A61Q5/04

**Language of the proceedings:** EN

**Title of invention:**

METHOD OF TREATING HAIR

**Patent Proprietor:**

Unilever IP Holdings B.V.  
Unilever Global IP Limited

**Opponent:**

L'OREAL

**Headword:**

METHOD OF TREATING HAIR/Unilever IP Holdings B.V. and Unilever  
Global IP Limited

**Relevant legal provisions:**

EPC Art. 54, 56

**Keyword:**

Main request - Novelty and Inventive step (Yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**

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**Chambres de recours**

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Case Number: T 1486/20 - 3.3.07

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.07**  
**of 18 April 2023**

**Appellant:**

(Opponent)

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**Decision under appeal:**

**Decision of the Opposition Division of the  
European Patent Office posted on 20 April 2020  
rejecting the opposition filed against European  
patent No. 2852375 pursuant to Article 101(2)  
EPC.**

**Composition of the Board:**

<b>Chair</b>	A. Jimenez
<b>Members:</b>	D. Boulois
	J. Molina de Alba

## **Summary of Facts and Submissions**

I. European patent No. 2 852 375 was granted on the basis of a set of 4 claims.

Independent claim 1 as granted read as follows:

"1. A process of treating the hair comprising the following consecutive steps:

- i) applying to dry hair a hair treatment composition having a pH of 3 or less at 20°C and comprising at least 4 wt% of the total composition of a bidentate or tridentate carboxylic acid;
  - ii) leaving the product on the hair for at least 5 minutes;
  - iii) rinsing the product from the hair; and
  - iv) combing;
- in which the carboxylic acid is tartaric acid and/or citric acid."

II. The patent was opposed under Article 100 (a) and (b) EPC on the grounds that its subject-matter lacked novelty and inventive step and was not sufficiently disclosed.

III. The 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 : EP 1393708

D2 : WO 2012/084532 A2

D9 : WO 2008/132101 A2

D15: Additional technical data filed by the patent proprietors during the opposition proceedings

- V. According to the decision under appeal, the claimed subject-matter was sufficiently disclosed.

The claimed invention was novel over D1, since the use of a comb or a combing step was not disclosed in D1, not even implicitly. It was also novel over D2, since the hair treatment disclosed therein was not applied on completely dry hair.

With regard to inventive step, D9 was considered as the closest prior art, rather than D1. However, it was the general teaching of D9 which constituted the closest prior art and not the comparative example of page 13. The objective technical problem solved over D9 was the provision of an alternative method of straightening hair. D9 would not have incited the skilled person to reduce the pH to 3 or less, since it taught a preferred pH of 5-8. The claimed solution was not obvious.

- VI. The opponent (hereinafter the appellant) filed an appeal against the decision. With the statement setting out the grounds of appeal the appellant submitted the following item of evidence:

D17: New comparative experiments provided by the opponent.

- VII. With a letter dated 11 January 2021 the patent proprietors (hereinafter the respondents) filed auxiliary requests 1 and 2 and requested that D17 not be admitted into the appeal proceedings.

- VIII. In a communication dated 16 January 2023, the Board expressed its preliminary opinion that the main request was novel and inventive.
- IX. Oral proceedings took place on 18 April 2023. At the end of the oral proceedings, the board announced its decision.
- X. The arguments of the appellant may be summarised as follows:

Main request - Novelty

The patent neither defined the term "combing" nor illustrated the tool with which this step had to be implemented. A straightener allowed to align the hair like a comb. Thus, a combing step was disclosed in Examples 5-C and 5-D of D1 and the document was relevant for novelty.

The hair treated in D2 was not completely dry ("jedoch nicht vollständig getrocknet", see D2, page 23, 2.1, step 2). In view of this term, the skilled person would understand that at least a part of the hair was dry.

Main request - Inventive step

Either D1 or D9 could constitute the starting point for the assessment of inventive step.

There was no reason to treat the comparative composition of D9 in a different way only because it had been disclosed as being comparative. D9 demonstrated that the comparative composition also smoothed the hair. Moreover, the composition comprising 1% adenine and 5% citric acid at pH 3 (D9, table 1,

first line) was also according to the invention of D9, i.e. it was covered by claim 1 of D9. The claimed process differed from D9 in that it included a rinsing step of the treated hair. The experiments in D15 did not show any effect over the comparative composition of D9, in particular for compositions containing tartaric acid, so the problem had to be defined as the provision of an alternative method of straightening hair. As rinsing was a well known step in cosmetic processes, the claimed solution was obvious.

When taking D1 as closest prior art, the objective technical problem was also the provision of an alternative method. There was no limitation in claim 1 of the main request with regard to the claimed steps; the claim could also include the further steps of D1. It was sufficient to invert the rinsing and combing steps in D1 to arrive at the claimed process.

XI. The arguments of the respondents may be summarised as follows

Main request - Novelty

A step of combing was disclosed in examples 5-C and 5-D of D1 but as a step after applying the composition and not as the final or last step as claimed.

There was no disclosure of a rinsing step immediately after product application on the hair in E3 of D2. Another difference between D2 and claim 1 of the patent was that in D2 the hair was not completely dried before treatment of the agent.

Main request - Inventive step



Compared to D1, D9 provided a better starting point as it dealt with hair straightening. It was not disputed that the skilled person could start from the comparative example disclosed in D9, but it was questionable why they would start from a comparative example which showed inferior results in an expectation to solve the problem. Even if the objective technical problem was defined as the provision of an alternative, the solution was still a non-obvious alternative: D9 taught away from a rinsing step and suggested a different pH value for the composition and the addition of adenine.

With regard to D1, combing was not disclosed as final step. Furthermore, the method of D1 related to disruptions of bounds in the hair, which was a different method.

## XII. Requests

The appellant requested that the decision under appeal be set aside and that the patent be revoked.

The respondents requested that the appeal be dismissed or, alternatively, that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of one of the sets of claims filed as auxiliary requests 1 and 2 with the reply to the statement of grounds of appeal, dated 11 January 2021. The respondents also requested that the test report D17, filed by the appellant with the statement of grounds of appeal, not be admitted into the appeal proceedings.

## Reasons for the Decision

### 1. Main request - Novelty

1.1 A novelty objection was raised by the appellant against claim 1 of the main request over examples 5-C and 5-D of D1 and over D2 (see page 23, 2.1 Step 2).

1.2 D1 discloses in example 5 the treatment of hair by a first pack comprising a reducing agent, an intermediate treatment and a second pack comprising an oxidizing agent; the compositions applied with the intermediate treatment and the second pack comprise an acid and have a pH of 3.0. The intermediate treatment Y and the second pack X and Y were prepared as in example 1 of D1. They comprise 5% of citric acid at pH 3.0 (see [0110] of D1 and Table 7).

More particularly in examples 5C and 5D, the hair is treated with a first pack without acid and with a pH higher than 3, and thereafter "smoothed into straight configuration with fingers or a comb". The intermediate treatment is done with a composition containing 5% of citric acid at pH 3.0. This treatment is promptly rinsed off with water. The second pack, comprising inter alia an oxidizing agent and 5% of citric acid at pH 3.0, is then applied to the hair, "smoothed into straight configuration", left over for 15 minutes, rinsed off with water and then dried (see par. [0113] of D1). The final step of examples 5-C and 5-D is an ironing step at 170°C (see Table 7 of D1). Hence, there is no disclosure of a consecutive combing step after the rinsing step in the step of application of the intermediate pack or the second pack.

The Board concurs with the opposition division that the ironing step which follows the rinsing step in examples 5C and 5D cannot be seen as a combing step. The appellant's argument that a straightening iron aligns the strands of hair as a comb is incorrect. Combing and ironing are not interchangeable but technically differentiated cosmetic technics. Moreover, D1 clearly indicates when the hair needs alignment or combing, e.g. in paragraph [0111] for the treatment with the first pack. However, paragraph [0113], which discloses the rinsing step, does not contain such an indication.

Consequently, the disclosure of D1 is not novelty-destroying for the subject-matter of claim 1 of the main request.

- 1.3 D2 describes in example E3 a hair shaping process that involves applying an alkaline shampoo, drying the hair with paper towels and then applying an acid composition to the hair (see pages 23-24); said acid composition comprises 10% by weight of tartaric acid (see D2, example E3 and claims 6 and 7). The opposition division considered that the pH of the acidic composition falls under the scope of claim 1 of the patent, a point that was not contested by the respondent. The hair stays in contact with the acid composition for one hour, then the composition is rinsed and the treated hair can be shaped, including with a comb (see D2, page 23, point 7).

The Board notes, as did the opposition division in its decision, that the process disclosed in example E3 is not applied to dry hair, to the contrary of the process claimed in claim 1 of the main request. D2 indicates indeed clearly that, after application of the alkaline shampoo, the strand of hair was squeezed lightly

between paper towels, but not dried completely, i.e. "die Haarsträhne wurde zwischen Papiertüchern leicht ausgedrückt, jedoch nicht vollständig getrocknet" (see D2, page 23, point 2). The fact, as argued by the appellant, that some hair might be dry in example E3 of D2 is irrelevant, since the application of the acidic composition in the first step of the claimed method of the main request is done only on fully or completely dry hair, which is clearly distinct.

D2 is therefore not novelty destroying.

1.4 Consequently, the main request meets the requirements of Article 54 EPC.

2. Main request - Inventive step

2.1 The claimed invention relates to a method of hair straightening that mitigates hair damage and in which the hair remains straight after subsequent washing (see [001] and [0008]).

2.2 The opposition division considered the document D9 to represent the closest prior art, rather than D1. The appellant considered that D1 was as suitable as D9 as a starting point for assessing inventive step.

2.2.1 D9 discloses a method that involves applying to the hair a composition comprising a straightening active selected from adenine, guanine or derivatives thereof. The composition further comprises an organic acid, preferably citric acid, and has pH at 30 °C from 5 to 8 (see the claims).

D9 describes on page 13 the application of a composition on hair followed by a straightening step

with a wet to dry hot iron, a combing step and a drying step of three hours at 30°C (see page 13, Examples, lines 14-17). Table 1 of D9 shows the compositions that were applied on the hair. These included compositions comprising adenine and citric acid at pH 3 and 6, and a composition comprising 5% of citric acid alone at pH 3. D9 concludes that the best straightening is achieved at pH 6 compared with pH 3; it is however also clear from the table that the citric acid solution at pH 3 and the composition of adenine and citric acid at pH 3 have a better straightening effect than water. This is shown as follows:

Table 1 shows the dosing formulation and final areas of hair switches.

Switch	Final volume after 3 hrs at 80%RH and 30°C (in mm <sup>2</sup> )
1% adenine / 5% citric acid (~ pH 3)	7422
2% adenine / 4% citric acid (~ pH 3)	7738
4% citric acid (~ pH 3)	10080
5% citric acid (~ pH 3)	9433
1% adenine / 5% citric acid / (+ TEA to pH6)	2380
Water (average of 4)	14021

In the opposition division's view, the process in D9 including the application of the composition comprising 5 % citric acid alone at pH 3 was an accidental disclosure in the sense that it was used as a comparative example; the focus of D9 lies in the combination of the adenine or guanine active with a solvent such as citric acid at pH values between 5 and 8. Hence, the opposition division considered that "the skilled person would not be motivated to select the examples with citric acid alone at the required pH as a starting point". The relevant disclosure of D9 which could serve as starting point for the assessment of inventive step would be the method of application of a composition comprising a straightening active selected from adenine, guanine or derivatives thereof and an

organic acid, namely citric acid, and wherein the composition has a pH at 30 °C from 5 to 8 (see the claims).

The Board disagrees with this position and notes that the comparative example of D9 involving the use of a composition of citric acid at pH 3 shows a hair straightening effect over a simple aqueous composition. Therefore, this part of the disclosure of D9 may serve as starting point for the assessment of inventive step. The fact that the effect of the comparative examples is not as good as that of the preferred compositions of D9 does not disqualify this technically relevant information. The Board notes furthermore that the disclosure of a composition comprising adenine and 5% citric acid at pH 3 could also be seen as the starting point for the assessment of inventive step.

In any case, the process of D9 does not comprise a rinsing step.

- 2.2.2 D1 relates to processes aiming to mitigate the damage caused by permanent straightening. It discloses a hair treatment comprising the following steps (see par. [0014]):
- applying a first pack with a hair keratin reducing substance,
  - applying an intermediate treatment with an intermediate pack having a buffer capacity and a pH of from 1 to 5,
  - rinsing,
  - applying a second pack comprising an oxidizing agent, allowing the hair to stand for 1 to 60 minutes, rinsing and drying.

The intermediate treatment compositions disclosed on page 10 of D1 comprise citric acid and lactic acid and have a pH of 3.0. The second pack composition is disclosed on pages 10 and 11 and comprises *inter alia* citric acid and hydrogen peroxide at pH 3.0.

Specific examples 5-C and 5-D of D1 disclose a process with the following steps (see Table 7, par. [0111]-[0114] and [0074]-[0076]):

- application of the first pack comprising the reducing agent and smoothing the hair into straight configuration with fingers or a comb,
- application of an intermediate pack comprising 5% of citric acid at pH 3.0
- rinsing,
- applying a second pack comprising an oxidizing agent and *inter alia* 5% of citric acid at pH 3.0, smoothing the hair into straight configuration, allowing the hair to stand for 15 minutes, rinsing, and drying by high temperature ironing at 170°C.

Contrary to the process of claim 1, this process does not contain any combing step after the application of an acidic composition and after a rinsing step, neither after application of the intermediate pack, nor after application of the second pack. In addition, after application of the intermediate pack the hair is promptly rinsed off without even leaving the product on the hair for at least five minutes, as required by claim 1.

Moreover, the process of D1 involves the use of reducing and oxidizing agents. It appears therefore technically remote from the claimed subject-matter and does not seem to be an appropriate starting point for the assessment of inventive step.

2.2.3 Therefore, the choice of D9 as closest prior art by the opposition division was correct. Nevertheless, in the following sections, inventive step will also be assessed starting from D1.

### 2.3 D9 as closest prior art

2.3.1 The opposition division considered in its decision, that, starting from D9, the objective technical problem was the provision of an alternative method of straightening the hair. The opposition division considered inter alia that no effect had been shown over D9.

The appellant also defined the objective technical problem as the provision of an alternative method of straightening the hair. It considered in particular that the experiments of D15 do not show any effect.

The respondents neither defined the objective technical problem nor referred to D15 or any of the examples of the patent in support of a possible technical effect linked with the rinsing step.

2.3.2 Indeed, none of the examples of the patent provides a comparison between a process as claimed and a process as disclosed in D9, namely without any rinsing step. Therefore, the examples do not support the existence of a technical effect over the closest prior art.

The experiments in D15 show the effect produced by a rinsing step, but only for a composition of 5% citric acid at pH 2, so that they neither provide a direct comparison with the disclosure of D9. They are



therefore not relevant for the assessment of inventive step of the main request.

The experimental report D17 was filed by the appellant with its statement of grounds of appeal. The appellant requested that D17 be admitted if the Board found the experiments in D15, filed by the respondents during the opposition proceedings, relevant. D17 reproduces the experiments of D15 and intends to show that the process of claim 1 does not provide any improvement in hair volume and smoothing when the rinsing step is not performed. As the experiments in D15 are not relevant for the assessment of inventive step of the main request, there is no need to discuss the admission of D17 into the appeal proceedings.

Consequently, as defined by the opposition division in its decision, the objective technical problem is the provision of an alternative method of straightening the hair.

- 2.3.3 The solution proposed in claim 1 of the main request is a process of treating the hair comprising the step iii) of rinsing the product from the hair.
- 2.3.4 It remains to determine whether the presence of this rinsing step is obvious starting from the teaching of D9.

The Board agrees with the appellant that a rinsing step is a common routine step in cosmetics and that, accordingly, the claimed solution may *a priori* appear obvious since the problem is merely the provision of an alternative method of straightening the hair. This common situation is however invalidated in the present case, since D9 teaches away from rinsing the hair after

application of the composition and leaving it for at least 5 minutes.

D9 teaches on page 9 that *"it is preferred that the products are left on hair after application and not immediately washed off (within 30 minutes of application). Such products are called "leave on" formulations"*. The Board understands from this passage that the method disclosed in D9 relates to the use of leave-on compositions which are not rinsed off from the hair. The Board disagrees in particular with the appellant's interpretation of this passage that a rinsing step was actually foreseen in the process of D9 but not immediately after the application on hair. The appellant's interpretation is at odds with the general technical teaching of D9. The purpose of D9 is to impart humidity resistance to straightened hair and thus retain its style (see D9, page 1, lines 28-30), so D9 discloses a product which is used on styled hair to prevent that it gets fluffy due to humid conditions. Styling benefits of styling products are lost when the hair is washed. Therefore, a skilled person considering D9 in its entirety would avoid a rinsing step.

This is confirmed by the disclosure on page 13, lines 1-4 of D9, which omits the presence of any rinsing step, by stating that *"the method of the invention comprises applying compositions of the invention followed by a heating step. The hair should be heated to a temperature above 100°C, preferably above 150°C, more preferably above 180°C"*. The heating step removes water from the hair and implies the absence of a subsequent rinsing step. The same conclusion may be derived from claim 9 of D9 and from the example on page 13 relating to Table 1. The latter also omits the presence of any rinsing step, as follows: *"Hair*

*switches were soaked in the solutions listed below for 1 hour and styled straight using wet to dry hot irons. After the final iron pass the switches were combed at least 5 times. The switches were left for 3 hours at 30°C and 80% relative humidity".*

Consequently, D9 teaches away the use of a rinsing step in its method, and the claimed solution is not obvious over D9.

#### 2.4 D1 as closest prior art

2.4.1 The appellant defines the technical problem over D1 as the provision of an alternative method of straightening the hair.

2.4.2 The solution proposed in claim 1 of the main request is a process of treating the hair comprising the step iv) of combing after a rinsing step.

2.4.3 In the Board's view, there is no incentive to modify the process disclosed in D1 to arrive at the process of claim 1 of the main request.

D1 relates to processes aiming to provide a hair straightening effect and achieving maintenance and restoration of the straightened effect through the disruption of the disulphide hair bonds. This is a complex two-step process that the contested patent explicitly desires to avoid (cf. par. [0002] of the patent specification).

Starting from Example 5, the skilled person would have to omit the treatment with the first pack and the intermediate pack and carry out the procedure only with the second pack to arrive at the process of claim 1. In

addition, they would have to change the order of the steps of rinsing and "*smoothing the hair into straight configuration*". Furthermore, the step of "*smoothing the hair into straight configuration*" disclosed in the final step of Example 5 of D1 is not explicitly disclosed as a combing step.

When starting from the application of the intermediate step of example 5, the conclusion is similar, since there is no disclosure or suggestion to add a further combing step.

Moreover, even if the final steps of D1 come close to the claimed process, they are taken out from the general context of D1 and remain technically remote from the process of claim 1, which requires that steps i) to iv) be performed consecutively.

Consequently, it is not possible to conclude from D1 that the skilled person would modify the process disclosed therein to arrive at the claimed subject-matter, so the claimed solution is not obvious.

2.5 The subject-matter of the main request is inventive over D1 and D9, and the main request meets the requirements of Article 56 EPC.

**Order**

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

The appeal is dismissed.

The Registrar:

The Chair:



B. Atienza Vivancos

A. Jimenez

Decision electronically authenticated