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**Datasheet for the decision  
of 29 March 2011**

**Case Number:** T 2299/08 - 3.3.10

**Application Number:** 00973666.1

**Publication Number:** 1221932

**IPC:** A61K 7/13

**Language of the proceedings:** EN

**Title of invention:**

Hair coloring compositions and methods

**Applicant:**

THE PROCTER & GAMBLE COMPANY

**Opponent:**

-

**Headword:**

Hair coloring compositions/THE PROCTER & GAMBLE COMPANY

**Relevant legal provisions:**

EPC Art. 54, 56

**Keyword:**

"Main and auxiliary requests 1 and 2: novelty (no)"  
"Auxiliary requests 3 to 9: inventive step (no) -  
determination of the closest prior art - comparative  
experiments not carried out with the closest prior art -  
obvious alternatives"

**Decisions cited:**

T 0197/86, T 0230/07

**Catchword:**

-



Case Number: T 2299/08 - 3.3.10

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.10  
of 29 March 2011

**Appellant:**

THE PROCTER & GAMBLE COMPANY  
One Procter & Gamble Plaza  
Cincinnati, OH 45202 (US)

**Representative:**

Adams, Harvey Vaughan John  
Mathys & Squire LLP  
120 Holborn  
London EC1N 2SQ (GB)

**Decision under appeal:**

Decision of the Examining Division of the  
European Patent Office posted 9 June 2008  
refusing European patent application  
No. 00973666.1 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** P. Gryczka  
**Members:** J.-C. Schmid  
D. S. Rogers

## Summary of Facts and Submissions

I. The appeal lies from the decision of the Examining Division refusing European patent application No. 00973666.1 with the International publication Number WO-A-01/28508.

II. *Inter alia* the following documents were cited in the examination proceedings:

- (1) FR-A-1 592 939 and
- (3) DE-C-197 21 797.

In the appealed decision refusing the application on the ground of lack of inventive step (Article 56 EPC), the Examining Division held that document (1), which disclosed a hair bleaching and colouring composition having a pH of from 7 to 9 and comprising ammonium carbonate, oxidative hair colouring agent, and an oxidising agent, represented the closest prior art. The oxidative hair colouring agents were defined in document (1) as any aromatic amine or polyhydroxylated aromatic compounds and, thus, encompassed compounds such as m-aminophenol and 1-naphtol required by the claims of the application. The claimed subject-matter was merely an arbitrary selection from the disclosure of document (1) and, thus, lacked an inventive step.

III. With the statement of grounds of appeal, the Appellant submitted the results of comparative experiments and an amended set of claims as a main request. With the communication accompanying the summons to attend oral proceedings, the Board drew the Appellant's attention to the fact that document (1) might be novelty

destroying for claim 1 of the main request. The Appellant further filed nine auxiliary requests.

Independent claim 1 of the main request read as follows:

"1. A hair bleaching and colouring composition comprising:

- (a) an oxidising agent
- (b) an oxidative hair colouring agent; wherein said oxidative hair colouring agent comprises an oxidative hair colouring agent selected from the group consisting of N,N bis(2-hydroxyethyl)-p-phenylenediamine, 2-amino-3-hydroxypyridine, 4-amino-2-hydroxytoluene, 2-methylresorcinol, m-aminophenol, and 1-naphthol; and
- (c) ammonium carbonate and/or ammonium carbamate; and wherein the pH of the composition is from about 8 to about 9."

Claim 1 of auxiliary request 1 differed from claim 1 of the main request in that 2-methylresorcinol and m-aminophenol were deleted.

Claim 1 of auxiliary request 2 differed from claim 1 of auxiliary request 1 in that 2-amino-3-hydroxypyridine further was deleted.

Claim 1 of auxiliary request 3 read as follows:

"1. A method for bleaching and colouring human or animal hair comprising applying to the hair a hair bleaching and colouring composition comprising:

- (a) an oxidising agent;

- (b) an oxidative hair colouring agent, wherein said oxidative hair colouring agent comprises an oxidative hair colouring agent selected from the group consisting of N,N bis(2-hydroxyethyl)-p-phenylenediamine, 2-amino-3-hydroxypyridine, 4-amino-2-hydroxytoluene, 2-methylresorcinol, m-aminophenol, and 1-naphthol; and
- (c) ammonium carbonate and/or ammonium carbamate; and wherein the pH of the composition is from about 7 to about 9, and wherein said composition is applied to the hair between 5 minutes and 30 minutes."

Claim 1 of auxiliary request 4 differed from claim 1 of auxiliary request 3 in that 2-methylresorcinol and m-aminophenol were deleted.

Claim 1 of auxiliary request 5 differed from claim 1 of auxiliary request 3 in that 2-methylresorcinol, 2-amino-3-hydroxypyridine and m-aminophenol were deleted.

Claim 1 of auxiliary request 6 differed from claim 1 of the main request in that m-aminophenol and 1-naphthol were deleted and the pH of the composition was from about 7 to about 9.

Claim 1 of auxiliary request 7 differed from claim 1 of auxiliary request 6 in that 2-methylresorcinol further was deleted.

Claim 1 of auxiliary request 8 differed from claim 1 of auxiliary request 7 in that 2-amino-3-hydroxypyridine further was deleted.

Claim 1 of auxiliary request 9 differed from claim 1 of auxiliary request 8 in that 4-amino-2-hydroxytoluene further was deleted.

- IV. According to the Appellant multiple selections had to be made within the disclosure of document (1) to arrive at the subject-matter of claim 1 of the main request and of auxiliary requests 1 and 2. Furthermore the pH range of from about 8 to about 9 defined in claim 1 was narrow with respect to the range of from about 7 to 9 disclosed in document (1) (see decision T 230/07, point 4.1.6; not published in OJ EPO). In addition, document (1) concerned slightly alkaline compositions, i.e. to compositions having a pH in the range of 7 to 8 rather than in the claimed range of 8 to 9. Hence the subject-matter of claim 1 of the main request and of auxiliary requests 1 and 2 was novel over document (1).

The method for bleaching and colouring hair according to claim 1 of auxiliary request 3 to 5 was novel over document (1) on account of the required period of time of between 5 and 30 minutes during which the colouring composition was applied to the hair.

For the assessment of inventive step, the closest prior art was not document (1) but the general knowledge of the skilled person concerning oxidative hair colorations conventionally carried out with an oxidative system comprising ammonium hydroxide and hydrogen peroxide.

The inventive step of the claimed methods resided in the selection of specific colouring agents. In fact,

the experimental data filed with the statement of grounds of appeal revealed that, when compared to other hair colouring agents, the hair colouring agents defined in the claims were more sensitive to a system comprising ammonium carbonate and, hence, gave rise to colorations that were different than that obtained with a conventional ammonium hydroxide/hydrogen peroxide system. Since it was not obvious from document (1) that a wider colour variety could be produced with the same hair colouring agents by modifying the oxidation system, the claimed methods implied an inventive step.

The subject-matter of claim 1 of auxiliary requests 6 to 9 was novel over document (1) since none of the hair colouring agents required by the claim was described in document (1). As document (1) failed to recognize that these specific hair colouring agents were more carbonate-sensitive than the hair colouring agents disclosed in document (1), the subject-matter of claim 1 of these requests involved an inventive step.

V. The Appellant requested that the decision under appeal be set aside and that a patent be granted in the following version:

- 1) on the basis of claims 1-15 of the main request filed with the Grounds of Appeal dated 20 October 2008; or subsidiarily
- 2) on the basis of the claims of one of the auxiliary requests 1 to 9, all filed under cover of a letter dated 28 February 2011.

VI. At the end of the oral proceedings, the decision of the Board was announced.

## Reasons for the Decision

1. The appeal is admissible.

### *Main request*

2. *Amendments (Article 123(2) EPC)*

Claim 1 is based on the combination of claims 1 and 2 of the application as filed. Furthermore the oxidative colouring agents have been specified according to page 18, second paragraph of the application as filed. Hence, the requirements of Article 123(2) EPC are satisfied.

3. *Novelty (Article 54 EPC)*

- 3.1 Document (1) discloses an intermediate hair colouring composition comprising an oxidative hair colouring agent, including 1-naphtol and m-aminophenol, and ammonium carbonate (see "résumés" 1 and 2e on page 6 of document (1)). This intermediate colouring composition is mixed with an oxidising agent to give the final hair colouring composition having a pH of about 7 to 9 (see résumé 5).

Résumé 5 refers back to résumés 1 and 2 and, hence, discloses a composition with the combination of technical features required by claim 1 of the main request.

- 3.2 According to the Appellant a double choice had to be made in the disclosure of document (1) in order to



arrive at the subject-matter of claim 1, that is, first choosing the option 2e from options 2a through 2f in résumé 2, and then within the option 2e choosing m-amino phenol or 1-naphtol from the listed oxidative dyes.

However, this argument is not convincing since only the choice of m-amino phenol or 1-naphtol is to be made from the list of oxidative dyes disclosed in résumé 2 to arrive at the claimed compositions. This choice of m-amino phenol or 1-naphtol does not result in a novel combination of technical features and, thus, cannot render the claimed compositions novel.

- 3.3 The Applicant further submitted that the indication of the pH ranging from about 8 and about 9 in claim 1 conferred novelty to the claimed subject-matter, since this range was narrow when compared to the range of 7 to 9 disclosed in document (1). However, this argument must be rejected since the claimed range of about 8 to about 9 cannot be considered as narrow when compared to the pH range of about 7 to 9 disclosed in document (1).
- 3.4 Consequently, the subject-matter of claim 1 lacks novelty with respect to document (1).

#### *Auxiliary requests 1 and 2*

#### 4. *Novelty (Article 54 EPC)*

Claim 1 of auxiliary requests 1 and 2 differs from claim 1 of the main request exclusively in that 2-methylresorcinol, m-aminophenol and/or 2-amino-3-hydroxypyridine are deleted.

As claim 1 of these requests still encompasses colouring compositions comprising 1-naphtol, which alternative is disclosed in résumé 2e of document (1), their subject-matter lacks novelty for the same reasons as claim 1 of the main request (see point 3 above).

*Auxiliary request 3*

5. *Amendment (Article 123(2) EPC)*

Claim 1 of this request is based on the combination of claim 11 with claim 1 of the application as filed. The oxidative colouring agent has been specified according to page 18 second paragraph of the application as filed which recites *inter alia* the six particular agents listed in amended claim 1. Furthermore, the application time of between 5 minutes and 30 minutes is disclosed on page 41 penultimate paragraph of the application as filed. Hence, the requirements of Article 123(2) EPC are satisfied.

6. *Novelty (Article 54 EPC)*

Document (1) discloses a method for colouring hair comprising applying to the hair a colouring composition having a pH of about 7 to about 9 and comprising an oxidising agent, an oxidative hair colouring agent, in particular m-aminophenol and 1-naphtol, and ammonium carbonate. Document (1) further discloses that the composition is applied to the hair during sufficient time to assure substantial dyeing (résumés 5 and 6), but does not disclose any precise application time, let

alone an application time comprised between 5 minutes and 30 minutes.

Consequently, the subject-matter of claim 1 is novel over document (1).

7. *Inventive step (Article 56 EPC)*

According to the established jurisprudence of the Boards of Appeal it is necessary, in order to assess inventive step, to establish the closest state of the art, to determine in the light thereof the technical problem which the invention addresses and successfully solves, and to examine the obviousness of the claimed solution to this problem in view of the state of the art. This "problem-solution approach" ensures the assessment of inventive step on an objective basis.

7.1 *Closest prior art*

Document (1) relates to oxidative hair colouring compositions and method for colouring hair and describes all the technical features required by the method according to claim 1 with the exception of the indication of a particular application time of the colouring composition on the hair (see point 6 above).

Consequently, the Board considers, in agreement with the Examining Division that the disclosure of document (1) specified above represents the closest state of the art, and, hence, takes it as the starting point in the assessment of inventive step.

The Appellant considered, however, that the closest prior art would rather be the general knowledge of the person skilled in the art relating to conventional oxidative hair colorations carried out with an oxidation system, comprising ammonium hydroxide and hydrogen peroxide at pH 10, this system being by far the most used.

However, the closest prior art is represented by a prior art document disclosing subject-matter conceived for the same purpose as the claimed invention and additionally having the most relevant technical features in common. In the present case, a method for colouring hair using an oxidation system comprising ammonium hydroxide and hydrogen peroxide at pH 10, the purported general knowledge of the skilled person, differs from the claimed method by the oxidation system which is involved, whereas the claimed method for colouring hair falls within the ambit of the disclosure of document (1).

The Board concludes therefore that a method for colouring hair using the ammonium hydroxide/hydrogen peroxide system is further away from the claimed method than the method for colouring hair disclosed in document (1). This argument of the Appellant must thus be rejected.

## 7.2 *Technical problem underlying the application*

The Appellant submitted that the technical problem underlying the application consisted in finding dyes which lead to a different coloration in an ammonium

carbonate and/or ammonium carbamate system than that obtained in the ammonium hydroxide system.

However, the subject-matter of claim 1 which, following the problem/solution approach, should represent the solution to this technical problem, relates to a method for bleaching and colouring hair characterized by a particular application time of the colouring composition. Hence, the proposed solution is not a solution to the problem identified by the Appellant.

The Appellant argued that the problem/solution approach was not appropriate in the present case. The feature establishing novelty with respect to document (1) was the period of time of 5 to 30 minutes during which the colouring composition is applied to the hair. However, the inventive step resided in the selection of hair colouring agents which were more sensitive to a system comprising ammonium carbonate than to a system comprising ammonium hydroxide. This increased sensitivity was demonstrated by the filed data of the comparative tests. Document (1), on the other hand, failed to distinguish such carbonate-sensitive hair colouring agents from carbonate-insensitive hair colouring agent.

This argument does not, however, put into question the applicability of the problem-solution approach to the present case, it merely shows that the Appellant defined a technical problem which is not in agreement with the claimed subject-matter. In fact, the technical problem defined by the Appellant, i.e. finding particular colouring agents having specific properties cannot logically have as a solution a method of

colouring hair with known colouring compositions characterized by the length of time they are applied to the hair.

With regard to the comparative tests on which the Applicant relied, the comparison with the closest state of the art must be such that the purported effect is convincingly shown to have its origin in the distinguishing feature of the invention (see T 197/86, EPO OJ 1989, 371, points 6.1.2 and 6.1.3 of the reasons). In the present case, the experimental report filed with the letter of 20 October 2008 compared the colorations of compositions differing from each other by the presence of ammonium carbonate instead of ammonium hydroxide.

However, the claimed method is characterised in that the colouring composition is applied to the hair for a length of time from 5 to 30 minutes, the presence of ammonium carbonate as required by present claim 1 being already disclosed in the closest prior art (see point 6 above). Accordingly, this test report does not concern the impact of the essential technical feature distinguishing the claimed composition from the closest prior art (see point 7.1 above), i.e. that the composition is applied to the hair for a length of time from 5 to 30 minutes. Hence, the comparison provided by this test does not adequately demonstrate any effect linked to the feature distinguishing the claimed subject-matter from the closest prior art.

In the absence of any demonstrated effect with respect to methods disclosed in document (1) the technical problem underlying the application is to be

reformulated into the provision of a further method for colouring hair.

### 7.3 *Solution*

The proposed solution is the method according to claim 1 characterised in that the colouring composition is applied to the hair for between 5 and 30 minutes.

### 7.4 *Obviousness*

At the oral proceedings before the Board the Appellant submitted that the introduction into claim 1 of the range of time during which the composition is applied was only intended to establish novelty with respect to the method disclosed in document (1), which merely required sufficient time to colour the hair without further precision. Therefore, since the claimed range of time of from 5 to 30 minutes is not linked to any surprising technical effect, it must be considered as an arbitrary limitation for which no inventive step can be acknowledged.

As a result, claim 1 of auxiliary request 3 is not allowable since its subject-matter lacks an inventive step pursuant to Article 56 EPC.

### *Auxiliary request 4 and 5*

### 8. *Inventive step (Article 56 EPC)*

Claim 1 of auxiliary request 4 differs from claim 1 of auxiliary request 3 in that 2-methylresorcinol and m-aminophenol are deleted. In claim 1 of auxiliary

request 5, 2-amino-3-hydroxypyridine is additionally deleted.

Claim 1 of these requests encompasses a method involving colouring compositions comprising 1-naphtol, which is also described in document (1) (see point 3 above). Thus, the restriction to specific colouring agents, but still comprising 1-naphtol, does not change the negative conclusion reached by the Board with regard to the inventive step of the subject-matter claimed in auxiliary request 3.

Under these circumstances, auxiliary requests 4 and 5 are not allowable since the subject-matter of claim 1 of these requests lacks an inventive step for the same reasons as for auxiliary request 3 (Article 56 EPC).

*Auxiliary request 6 to 9.*

9. *Amendments (Article 123(2) EPC)*

Claim 1 of auxiliary request 6 to 9 is based on claim 1 of the application as filed wherein the oxidative colouring agent is specified according to page 18, second paragraph of the application as filed which discloses *inter alia* the particular agents listed in claim 1 of each of these requests. Hence, the requirements of Article 123(2) EPC are satisfied.

10. *Novelty (Article 54 EPC)*

The particular hair colouring agents listed in claim 1 of each of the auxiliary requests 6 to 9 are not



specifically disclosed in document (1). Accordingly, their subject-matter is novel over document (1).

11. *Inventive step (Article 56 EPC)*

Independent claim 1 of auxiliary request 9 is directed to an embodiment comprised within claim 1 according to auxiliary requests 6, 7 and 8, namely to the alternative wherein the oxidative hair colouring agent comprises N,N-bis(2-hydroxyethyl)-p-phenylenediamine. In case this embodiment according to auxiliary request 9 lacked inventive step, a consequence must be that the subject-matter of auxiliary request 6, 7 and 8, which comprises that embodiment, cannot involve an inventive step either. For this reason, it is appropriate that the subject-matter of claim 1 of auxiliary request 9, is examined first for the presence of inventive step.

11.1 The comparative report filed on 20 October 2008 referred to by the Appellant does not compare the dyeing properties obtained by the claimed compositions with respect to those obtained by compositions of document (1) (see point 7.2 above). Accordingly, since no technical effect has been shown for the claimed compositions with respect to the closest prior art compositions of document (1), the technical problem underlying the invention is to provide alternative colouring compositions.

The proposed solution is the composition of claim 1 characterised in that the colouring agent comprises N,N-bis(2-hydroxyethyl)-p-phenylenediamine.

Finally, it remains to be decided whether it is obvious to replace in the compositions of document (1) the colouring agent by N,N-bis(2-hydroxyethyl)-p-phenylenediamine in order to provide an alternative composition.

Any oxidative colouring agent, in particular aromatic diamines, is taught to be suitable for use in the hair colouring compositions of document (1) (see page 3, lines 1 to 7). Document (3) discloses a process for bleaching and colouring hair with similar hair colouring composition having a pH of 8 to 11, comprising an oxidising agent, ammonium carbonate and as colouring agent, *inter alia*, N,N-bis(2-hydroxyethyl)-p-phenylenediamine (see claim 1 in combination with page 4, line 1).

It was thus obvious for the person skilled in the art, seeking to provide an alternative hair colouring composition to that taught by document (1), to use another colouring agent, namely the N,N-bis(2-hydroxyethyl)-p-phenylenediamine disclosed in document (3) in the same type of hair colouring composition, thereby, arriving without inventive ingenuity at a composition in accordance with present claim 1 of auxiliary request 9. For these reasons, the subject-matter of claim 1 of auxiliary request 9 is obvious in the light of documents (1) and (3).

Consequently, the subject-matter of claim 1 of auxiliary request 9 lacks an inventive step (Article 56 EPC).

11.2 As Claim 1 of auxiliary requests 6 to 8 encompasses the composition according to claim 1 of auxiliary request 9, their subject-matter lacks an inventive step for the same reasons.

## **Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:

L. Fernández Gómez

P. Gryczka