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DECISION
of 17 February 2006

Case Number: T 0464/02 - 3.3.10

Application Number: 97111540.7

Publication Number: 0819422

IPC: A61 K7/13

Language of the proceedings: EN

Title of invention:
Composition for dyeing of human hair

Patentee:
KAO CORPORATION

Opponent:
Henkel

Headword:
Composition for dyeing of human hair/KAO

Relevant legal provisions:
EPC Art. 56

Keyword:
"Main and auxiliary request: inventive step (no) - obvious solution - no deterrent teaching in the art"

Decisions cited:
T 0249/88, T 1053/93

Catchword:
-



Case Number: T 0464/02 - 3.3.10

D E C I S I O N
of the Technical Board of Appeal 3.3.10
of 17 February 2006

Appellant: Henkel
(Opponent) Kommanditgesellschaft auf Aktien
Henkelstrasse 67
D-40589 Düsseldorf (DE)

Representative: -

Respondent: KAO CORPORATION
(Proprietor of the patent) 14-10, Nihonbashi,
Kayaba-cho 1-chome
Chuo-ku,
Tokyo (JP)

Representative: Hansen, Bernd
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 12 March 2002
rejecting the opposition filed against European
patent No. 0819422 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: R. Freimuth
Members: J. Schmid
P. Schmitz

Summary of Facts and Submissions

I. The Appellant (Opponent) lodged an appeal on 10 May 2002 against the decision of the Opposition Division, posted on 12 March 2002, which rejected the opposition against European patent No. 0 819 422 pursuant to Article 102(2) EPC, independent claim 1 reading as follows:

"1. Composition for dyeing of human hair in an aqueous medium, comprising

- (a) 0.0001% to 2.5% by wt. of at least one cationic direct-acting hair dyestuff;
- (b) 0.1% to 10% by wt. of at least one zwitterionic (amphoteric) surfactant; and
- (c) 0.1% to 5% by wt. of at least one water-soluble UV-absorbing compound bearing an anionic group, all percentages calculated to the total composition."

II. Notice of opposition had been filed by the Appellant requesting revocation of the patent in suit in its entirety on the ground of lack of inventive step as indicated in Article 100(a) EPC. *Inter alia* the following documents were submitted in the opposition proceedings:

- (1) GB-A-0 986 712,
- (2) FR-A-2 096 377 and
- (3) DE-A-2 046 818.

III. The Opposition Division held that the claims in the form as granted satisfied the requirement of inventive step (Article 56 EPC). According to the Opposition

Division the skilled person would not have combined the teaching of document (3) with that of document (2) in order to solve the problem underlying the invention as he had to select the appropriate water-soluble UV-absorber without knowing how this absorber would act in the presence of the cationic dye and the amphoteric surfactant with respect to the stability of the composition.

IV. The Respondent defended the maintenance of the patent in suit on the basis of the claims as granted and subsidiarily on the basis of claims 1 to 11 filed as auxiliary request on 16 January 2006, whose independent claim 1 differed from claim 1 as granted in specifying the aqueous medium of "having a pH value from 4 to 6".

V. The submissions of the Appellant can be summarized as follows:

The Appellant held that document (2) represented the closest prior art. This document disclosed an aqueous hair colouring composition comprising a cationic direct-acting hair dye and an amphoteric surfactant. The only difference between the teaching of document (2) and the patent in suit was the presence of a water-soluble UV-absorbing compound bearing an anionic group. The technical problem underlying the patent in suit was to be seen in the provision of a colouring composition leading to an improved light-fastness while being stable. Adding a water-soluble UV-absorber into a hair colouring composition in order to improve the light-fastness was known from document (3). With regard to the stability of the composition, the Appellant argued

that the skilled man would not be deterred by document (1) to add small amounts of an anionic compound in a composition comprising a cationic dye, since that teaching exclusively referred to anionic detergents, which teaching could not be extrapolated to any anionic compounds. Actually, the teaching of document (1) was exactly the same as in the patent of suit which advised against the presence of considerable amounts of anionic surfactants in the claimed composition (patent specification page 5, line 33).

The Appellant therefore concluded that the claimed subject-matter was the obvious combination of document (2) with document (3).

In support of its argumentation, it furthermore filed document (5):

(5) Karlheinz Schrader, Grundlagen und Rezepturen der Kosmetika, 1989, 2. Auflage, pages 299 and 812.

VI. The Respondent held that document (2) could be regarded as the closest prior art as well as document (1).

Starting from document (2) the Respondent defined the technical problem underlying the invention as the provision of a hair colouring composition leading to an improved light-fastness while maintaining the stability of said composition.

This problem was solved by the addition of an anionic, water-soluble UV-absorber which, if combined with an amphoteric surfactant and with the cationic dye, resulted in a stable composition. Although document (3)

described a colouring fixing agent comprising an UV-absorber in order to avoid the influence of UV light onto the hair, there was no restriction as to the water solubility thereof. There was also no limitation with respect to the nature of the dyes which could be of acidic or basic nature. There was no teaching in this document with respect to the stability problems when a cationic dye was used in combination with an anionic UV-absorber. This was emphasized by the fact that the working examples of document (3) disclosed no compositions comprising the combination of a cationic direct dye with an anionic UV-absorber. Furthermore document (1), which disclosed hair colouring compositions comprising a cationic dye and an amphoteric surfactant, reported that the presence of an anionic surfactant should be avoided in the composition because it was said to react with the basic groups of the dye and consequently destroyed the affinity of the dye for hair (page 3, lines 93 to 99). Although the stability was not explicitly addressed in this passage of document (1), the skilled person would deduce therefrom that the reaction product of the anionic detergent and the cationic dye would form a precipitate thus harming the stability of the composition.

The Respondent concluded that the skilled person would therefore be prevented from adding an anionic water-soluble UV-absorber to the hair colouring composition of document (2).

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

The Respondent requested that the appeal be dismissed or, subsidiarily, that the patent be maintained on the basis of the auxiliary request filed with the letter dated 16 January 2006.

VIII. At the end of the oral proceedings held on 17 February 2006 the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Inventive step*

2.1 In accordance with the "problem-solution approach" applied by the Boards of Appeal to assess inventive step on an objective basis, it is in particular necessary 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.

2.2 The patent in suit is directed to a composition for dyeing human hair comprising a cationic direct-acting hair dyestuff, an amphoteric surfactant and an anionic water-soluble UV-absorbing compound. It aims at providing stable hair dyeing compositions producing on the hair lustrous, durable, expressive and light-stable colourations (patent specification page 2, lines 24 to 29).

2.3 Document (2) discloses a hair colouring composition comprising 2% by weight of a cationic direct dye, 7,95% by weight of a betainic surfactant, which is a preferred amphoteric surfactant according to the patent in suit, and 0.5% by weight of the sodium salt of ethylenediaminetetraacetic acid, which is an anionic agent (example on page 3, lines 3 to 29). The hair colouring composition is stable (page 4, lines 23 to 28) and the treated hair is uniformly, intensely and durably coloured (page 3, lines 35 to 38).

The Board considers, in agreement with the Parties, that document (2) therefore represents the closest state of the art, and, hence, the starting point in the assessment of inventive step.

2.4 In view of this state of the art the objective problem underlying the patent in suit, as submitted by the Respondent during the appeal proceedings, consists in providing a hair colouring composition having improved light-fastness while maintaining the stability of said composition.

2.5 The patent in suit proposes as the solution to this problem the composition according to claim 1 which is characterized by the presence of from 0.1% to 5% by weight of an anionic, water-soluble UV-absorber.

2.6 In view of the examples of the patent specification, the Appellant never disputed that the claimed compositions lead to a light-stable colouration while remaining stable and the Board is not aware of any reason for challenging this finding. For this reason,

the Board is satisfied that the problem underlying the patent in suit has been successfully solved.

- 2.7 Finally, it remains to decide whether or not the proposed solution to that objective problem underlying the patent in suit is obvious in view of the state of the art.

When starting from the compositions known from document (2), it is a matter of course that the person skilled in the art seeking to provide hair colouring compositions having improved light-fastness would turn his attention to that prior art in the field of colouration of hair just dealing with the same technical problem. As a skilled person he would be struck by document (3) which relates to the light-fastness of hair colouring compositions (page 1, first paragraph).

Document (3) teaches that light-fastness is achieved by the presence of a light protection agent in the composition (page 2, penultimate paragraph). Agents qualified in that document as being suitable include UV-absorbers such as the sodium salt of 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid and the sodium salt of 2-phenylbenzimidazole-5-sulfonic acid (page 3, first paragraph). Both compounds are qualified in the patent in suit as water-soluble UV-absorbing compound bearing an anionic group suitable in the claimed invention (see patent specification page 4, lines 34 to 37).

Document (3) further teaches that the light protecting agent should suitably be present in the hair colouring compositions in concentrations up to 2% by weight

(page 3, second paragraph), which concentrations are within the claimed range.

The Board concludes from the above that the state of the art represented by document (3) gives the person skilled in the art a concrete hint as to how to solve the problem underlying the patent in suit as defined in point 2.4 above of providing a stable composition having improved light-fastness, namely by adding into the hair colouring compositions known from the closest prior art document (2), particular water-soluble anionic UV-absorbers known from document (3) in concentrations within the claimed range thereby arriving at the claimed compositions, i.e. the solution proposed by the patent in suit. In the Board's judgment, it was obvious to try to follow the avenue indicated in the state of the art with a reasonable expectation of success without involving any inventive ingenuity, all the more since the compositions of document (2) already contain an anionic compound.

2.8 For the following reasons the Board cannot accept the Respondent's arguments designed to support an inventive step.

2.8.1 The Respondent submitted that document (3) did not address the stability of the composition with the consequence that the skilled person would not have taken it into consideration. However, the problem underlying the patent in suit is particularly directed to improving the light-fastness of the colouring compositions (see point 2.4 above) which is just the objective of document (3) lying within the same technical field. For that reason, the skilled person

was guided to adopt the teaching of that document, i.e. to add water-soluble anionic UV-absorbers, in order to solve the problem underlying the invention thereby arriving routinely at the claimed invention.

2.8.2 The Respondent argued that document (3) made no difference between the use of water-soluble and oil-soluble UV-absorbers whilst the patent in suit claimed the presence of water-soluble anionic UV-absorbers only, the use of water-insoluble UV-absorbers resulting in colourings being clearly inferior. However claim 1 does not preclude the presence of oil-soluble UV-absorbers in the compositions of the patent in suit since it defines the compositions of merely "comprising" the components a, b and c, thereby not excluding the presence of any other components including oil-soluble UV-absorbers. Thus, the Respondent's argument is not supported by the facts. Furthermore document (3) gives a clear incentive to include in the compositions water-soluble UV-absorbers identical to those qualified in the patent in suit as being suitable, thus rendering the claimed subject-matter obvious. The Respondent's finding that document (3) also addresses other embodiments, like oil-soluble UV-absorbers, however cannot render an obvious subject-matter inventive.

2.8.3 The Respondent furthermore asserted that the examples of document (3) did not specifically disclose compositions comprising in combination a cationic direct dye and an anionic UV-absorber, thus teaching away from the composition according to claim 1.

On the one hand, the Board cannot adopt the Respondent's approach that any -alleged- absence of

such a specific example in document (3) would have discouraged the skilled person from following the teaching of that document. Document (3) gives rather a clear incentive to include in the compositions particular water-soluble anionic UV-absorber in order to improve light-fastness thereby encouraging the skilled person to do so when aiming at improving the same property of the compositions known from the closest document (2).

On the other hand, example 1 of document (3) discloses a hair colouring composition comprising an anionic water-soluble UV-absorber and the hydrochloride salt of 2-nitro-1,4-diaminobenzene, which is a cationic compound and a dye. Although the Respondent qualified this compound as nitro dye not being a cationic dye in the sense of claim 1, document (3) discloses thereby a composition comprising the combination of an anionic UV-absorber and a cationic compound without reporting any stability problem, with the consequence that the Respondent's argument is not supported by the facts.

- 2.8.4 The Respondent argued against obviousness of the combination of documents (2) and (3) that document (1) reported to avoid the addition of an anionic surfactant to a composition comprising a cationic dye and an amphoteric surfactant, because the basic groups of the dye and the anionic detergent reacted together forming a precipitate and harming the stability of the composition. The skilled person was therefore prevented from adding an anionic UV-absorber to the composition of document (2).

However, that discouraging teaching of document (1) on page 3, lines 93 to 99 is limited to the addition of anionic detergents, whilst in the present case an anionic UV-absorber is added to the composition. This distinction between anionic detergents and other anionic compounds is in line with document (2) teaching the presence of an anionic compound in the composition without reporting any instability thereof. Moreover the Respondent is speculating when alleging that a precipitate is formed and the stability of the composition is harmed in document (1) since neither is taught in that section of the document.

Furthermore, when assessing inventive step it is not necessary to establish that the success of an envisaged solution of a technical problem was predictable with certainty. In order to render a solution obvious it is sufficient to establish that the skilled person would have followed the teaching of the prior art with a reasonable expectation of success (see decisions T 249/88, point 8 of the reasons; T 1053/93, point 5.14 of the reasons; neither published in OJ EPO). In the present case, the Board cannot agree with the Respondent's argument that due to some purported uncertainty about the predictability of success the skilled person would not have contemplated compositions comprising a cationic dye, an amphoteric surfactant and an anionic UV-absorbing compound in order to achieve light-fastness while maintaining the stability of the composition. The skilled person has a clear incentive from document (3) to do so (see point 2.7 supra). Nothing was submitted by the Respondent from which the Board could reasonably conclude that the skilled person has been deterred from following the straight teaching

of the art. In the absence of substantiating facts and corroborating evidence it has merely speculated what the Board cannot sanction.

2.9 Therefore, in the Board's judgement, the subject-matter of claim 1 represents an obvious solution to the problem underlying the patent in suit and does not involve an inventive step.

3. As a result, the Respondent's main request is not allowable for lack of inventive step pursuant to Article 56 EPC.

Auxiliary request

4. *Inventive step*

Claim 1 according to the auxiliary request differs from claim 1 according to the main request exclusively in that the pH value of the composition was limited to the range of 4 to 6 of claim 12 as granted.

At the oral proceedings before the Board the Respondent submitted that this limitation to a range of a pH value of 4 to 6 was designed for further departing the claimed invention from the composition of document (5) which showed a pH value of 6.8. He conceded that this range was not linked to any technical effect. Thus the claimed range is to be considered neither as critical nor as a purposive choice for solving the objective problem underlying the patent in suit, but merely as an arbitrary restriction of no technical significance.

The pH value in the examples of document (1) is adjusted to 5.8, which value is within the pH range indicated in claim 1, thus showing that the claimed range is conventional in the art.

The considerations concerning inventive step given in point 2.7 with respect to the main request are neither based on nor affected by the indication of a specific range in claim 1. That range can neither provide the claimed compositions with any inventive ingenuity as that range is arbitrary and the determination of a suitable pH range for a hair colouring composition is anyhow within the routine of a skilled person, which finding was not disputed by the Respondent. Therefore the conclusion drawn in point 2.9 supra with regard to the main request still applies for the auxiliary request, i.e. the subject-matter of claim 1 of that request is obvious.

5. In these circumstances, the Appellant's auxiliary request is not allowable for lack of inventive step pursuant to Article 56 EPC as well.

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:

C. Moser

R. Freimuth