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**D E C I S I O N**  
**of 9 February 2000**

**Case Number:** T 0229/96 - 3.3.2

**Application Number:** 84108084.9

**Publication Number:** 0134998

**IPC:** A61K 7/08

**Language of the proceedings:** EN

**Title of invention:**  
Hair rinse composition

**Patentee:**  
Kao Corporation

**Opponent:**  
Wella AG  
Henkel Kommanditgesellschaft auf Aktien  
Hans Schwarzkopf GmbH & Co. KG

**Headword:**  
Hair rinse/KAO

**Relevant legal provisions:**  
EPC Art. 56

**Keyword:**  
"Inventive step (yes): Not obvious modification of the closest prior art"

**Decisions cited:**  
-

**Catchword:**

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Case Number: T 0229/96 - 3.3.2

**D E C I S I O N**  
**of the Technical Board of Appeal 3.3.2**  
**of 9 February 2000**

**Appellant:** Henkel  
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**Other party:** Hans Schwarzkopf GmbH & Co.KG  
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**Representative:** Foitzik, Joachim Kurt  
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**Respondent:** Kao Corporation  
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**Representative:** Wächtershäuser, Günter, Prof. Dr.  
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**Decision under appeal:** Interlocutory decision of the Opposition Division

of the European Patent Office posted 2 February  
1996 concerning maintenance of European patent  
No. 0 134 998 in amended form.

**Composition of the Board:**

**Chairman:** P. Lançon  
**Members:** C. Germinario  
C. Rennie-Smith

## Summary of Facts and Submissions

- I. European patent No. 0 134 998 was granted pursuant to European patent application No. 84 108 084.9 on the basis of a set of 6 claims for all the designated Contracting States.
- II. Notice of opposition was filed by the appellant (opponent II), and by the other parties to the appeal proceedings pursuant to Article 107 (opponents I and III), requesting revocation of the patent under Article 100(a) EPC on the grounds of lack of novelty and inventive step.

The following documents were cited, *inter alia*:

(1) G.A. Nowak "Die Kosmetischen Präparaten" Verlag für chem. Industrie H. Ziolkowsky KG Augsburg, (1975), page 355 to 363;

(20) FR-A-2 357 240.

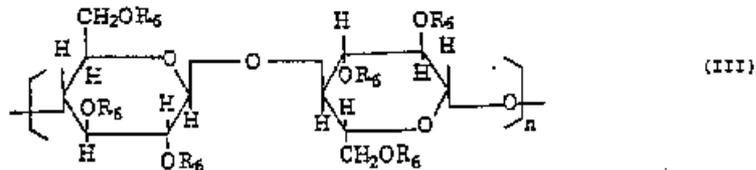
- III. The opposition division held that the claimed subject-matter was novel since the specific combination of features cited in claim 1, as amended on 24 February 1992, was not mentioned in any prior document. Moreover, on the basis of the results of the comparative test submitted by the respondent on 20 May 1994, showing improved stability and smoothness, the opposition division concluded that a composition exhibiting such properties was not made obvious by either the composition of document (1), which did not comprise a cellulose derivative, or by those of document (20) which comprised the same essential

components but in a different ratio.

- IV. The appellant lodged an appeal against this decision. In writing and during the oral proceedings, it contended that the comparative test submitted by the respondent, and relied upon by the opposition division, did not justify the conclusion that the compositions of the invention exhibited improved properties over the composition described in the closest prior art, document (1). In fact, the appellant argued that the test did not properly reproduce the composition of said prior document and, for this reason, did not show that the observed improvement could be attributed to the presence of a cellulose derivative as stabiliser. On the other hand, it maintained that in any case the use of cellulose polymers for the purpose of emulsion stabilisation was, as document (20) illustrated, well known to the skilled person and for this reason, it could not endow the claimed subject-matter with an inventive step.
- V. Among other arguments, the respondent emphasised, at the oral proceedings, that the composition of (1) was not an emulsion but a concentrated alcohol solution to be diluted by the user just before the use. This solution was not comparable with the emulsion of the invention either in the concentrated form or in the diluted form ready for use.
- VI. Oral proceedings were held before the Board on 9 February 2000.

The text of claim 1, of 24 February 1992, considered in the present decision reads:

"A hair rinse composition which comprises (A) 0.05 to 0.5 wt.-% of cationic surface active agent, (B) a higher alcohol having a linear or branched alkyl or alkenyl group having from 12 to 26 carbon atoms, or a glycerine mono fatty acid ester having a melting point not lower than 45°C and contained in an amount of 3 to 15 times by weight as large as ingredient (A) and (C) 0.1 to 5.0 wt.-% of a water-soluble polymer which is a cellulose derivative of the formula (III)



in which R<sub>6</sub>s independently represent hydrogen, (CH<sub>2</sub>CH<sub>2</sub>O)<sub>m</sub>-H, -(CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O)<sub>m</sub>-H (wherein m is an integer of from 1 to 5), -CH<sub>3</sub>, -C<sub>2</sub>H<sub>5</sub>, or -COONa, and n is an integer of from 5 to 5000, and said composition is produced by diluting a highly concentrated emulsified product containing 0.4 to 34 wt.-% of ingredient (A) and (B) in total with from 2 to 15 times by weight to the emulsified product of water."

Independent claim 5 is directed to a method for preparing the composition of claim 1.

VII. The appellant requested that the decision under appeal be set aside and the European patent No. 0 134 998 be revoked.

The respondent requested that the appeal be dismissed and the patent be maintained.

## Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of the amendments and novelty*

The Board is satisfied that the modified claims find support in the description as filed and that the amendments do not extend the protection conferred by the patent as granted.

The novelty of the subject-matter of the claims under consideration was recognised by the opposition division and not disputed by the parties in the present appeal proceedings. The Board concurs with the opinion that the claimed subject-matter in its entirety is novel.

3. *Inventive step*
  - 3.1 The Board shares the opinion of the parties that document (1) represents the closest prior art. This document describes a liquid concentrated composition (ie "Haar-Regenerator (konz.) page 362) comprising, in 1000 g of the composition, 145 g of cetyl alcohol (Emulgate® F spez), 25 g of a cationic surface active agent (Dehyquart® C krist.), and 30 g of polyvinyl pyrrolidine (Luviskol®), which is a water soluble stabiliser polymer. These three substances, are mixed with other usual additives and with 790 g of isopropyl alcohol to prepare a concentrate, which is then diluted 1:7 with water upon use.

- 3.2 In order to show the improved properties exhibited by the composition of claim 1 of the patent in suit as against the composition of document (1), the respondent produced the results of a test in which the composition of the invention was compared to this prior composition as to appearance, stability and rinsing performance. Improved stability both at low and high temperature and improved smoothness of the treated hair were reported for the composition of the patent in suit.
- 3.3 The appellant, although recognising this improvement, questioned whether the compared composition did in fact represent the composition of the closest prior art, document (1).

The Board notes that, while the composition according to claim 1 is in the form of a diluted emulsion ready for use, that described in (1) is a concentrated composition not suitable for use before dilution. It is evident that a meaningful comparison cannot be carried out between these two compositions as such, but only between two compositions in the same form suitable for the same use. For this reason, it was correct, in the Board's view, to compare the composition of the patent in suit with the composition of document (1) after dilution. As to the amounts of the different ingredients (a) to (g), the Board finds that these amounts, in percentages by weight based on the final diluted composition, reflect exactly the amounts in grams reported in (1), whereas the subsequent dilution of the concentrated mixture of these ingredients with 87.48% of water exactly reflects the 1:7 dilution suggested by document (1). For these reasons, the view of the Board is that the composition used for

comparison in the test submitted by the respondent is a fair reproduction of the closest prior art and, as such, the test reliably proves the improvement entailed in the invention of the patent in suit.

- 3.4 In considering the above discussed results, the technical problem to be solved by the present invention with regard to document (1) was that of providing hair rinse compositions exhibiting improved emulsion stability while maintaining optimal rinsing performance.

That the solution proposed by the patent, namely the composition of claim 1, is actually able to solve this problem, is shown by the results of the comparative test

- 3.5 The composition of claim 1 is characterised in part by its structural features, namely its ingredients and their relative amounts, and in part by the process for its preparation. This process implies a first step of making a concentrated emulsion of ingredients (A) and (B), which is then diluted with 2 to 15 times by weight of water. That this specific process largely contributes to the ultimate improved stability of the claimed composition is clearly shown in tables 2 and 3 in the patent.

- 3.6 The composition of document (1) differs from the claimed composition not only in that it comprises a stabiliser polymer which is not the cellulose derivative of claim 1, but also in that it is prepared using a different process.

In fact, there is no evidence showing that the concentrated composition of (1) is indeed a concentrated **emulsion**. On the contrary, in view of the fact that this composition comprises no water but a high amount of isopropyl alcohol, and in view of the alcohol solubility of all its ingredients, it can be concluded, as argued by the respondent and accepted by the Board, that document (1) discloses a concentrated **alcohol solution**. This solution is then diluted in one step with the final necessary amount of water. Whether or not an emulsion is formed upon dilution, cannot be discovered from the teaching in (1). It is however clear that, should an emulsion be produced, this would happen at the final stage of dilution, and not at an earlier stage as required by claim 1 of the patent in suit.

No suggestion to follow the process of the invention for preparing the composition of (1) can be found by the skilled person in this prior document itself. On the contrary, the teaching in (1) that the concentrate composition is to be diluted only upon application and not before, would suggest to the skilled person that the composition in diluted form would lack stability.

- 3.7 The skilled person faced with the technical problem to be solved would not find himself in any better position when considering the teaching of (1) in combination with the teaching in document (20).

This document discloses hair compositions comprising a cationic surface active agent, a long alkyl chain alcohol (cetyl alcohol) and a colloidal polymer, which represent the ingredients (A), (B) and (C) of claim 1

of the patent at issue.

According to claim 10 of this prior document, the composition, which comprises up to 99% water, is prepared by homogenising the mixture of the ingredients: cetyl alcohol, cationic surfactant and water, and then by adding to the homogenised mixture the colloidal stabiliser dispersed in some water.

The stability of the emulsion obtained according to this process is said to depend on the small size of the dispersed particles, and thus on the homogenisation step and on the presence of the colloidal stabiliser (see paragraph bridging pages 6 and 7).

Although the skilled person could have found in this document some indications that he could replace the polymeric stabiliser contained in the composition of document (1), namely polyvinyl pyrrolidone, with the cellulose derivative of claim 1 of the patent in suit, he would not have found any suggestion concerning either the specific process to be followed or the specific relative amounts of the different ingredients to be used.

Like document (1), document (20) also fails to recognise the critical importance of, first, making a **concentrated** emulsion of the ingredients (A) and (B) in the cited amounts and ratio, and then of diluting that emulsion with a significant excess, ie of 2 to 15 times, of water. Therefore, the skilled person aware of the teaching in (20) would not have envisaged modifying the method of preparation of (1) along the line disclosed in the patent in suit.

Further, the Board also finds it highly significant that, whereas claim 1 of the patent in suit requires ingredient (B) to exceed ingredient (A) by some 3-15 times, the ratio of the same ingredients in document (20) is from 1:2.3 to 1:0.42 (see claim 1). This means that the highest envisaged proportion of alcohol to cationic surfactant is 1:0.42 ie. 2,38 times. The document also underlines (page 5, lines 11 to 17) that the best stability and conditioning properties of the composition are observed in the range of alcohol/surfactant ratios 1:1.5 to 1:0.42 and that, outside this range, the composition becomes unstable in that either phase separation or excessive viscosity increase occurs. In fact, it is taught that cetyl alcohol, although improving the conditioning properties, decreases the stability and increases the viscosity of the composition (see the paragraph bridging page 4 and 5).

In the light of this teaching, the skilled person would not have considered compositions comprising a higher relative amount of ingredient (B), as is the case with the composition of (1) or the compositions of the patent in suit, as a reasonable solution to the aforementioned problem of emulsion stability.

For these reasons, the Board considers that neither the closest prior art in itself, document (1), nor the combination of the closest prior art with document (20) is prejudicial to the inventive step involved in the subject-matter of claim 1. Since independent claim 5 recites all the features cited in claim 1, the same reasons also apply to the method which is the subject-matter of claim 5.

**Order**

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

The appeal is dismissed

The Registrar:

The Chairman:

M. Dainese

P. A. M. Lançon