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Datasheet for the decision of 29 January 2026

Case Number: T 0190/24 - 3.3.07

Application Number: 18772805.0

Publication Number: 3684329

IPC: A61K8/41, A61K8/49, A61Q5/06, A61K8/02

Language of the proceedings: EN

Title of invention:
POWDER COMPOSITION COMPRISING HAIR DIRECT DYES

Patent Proprietor:
Kao Corporation

Opponent:
L'OREAL

Headword:
Powder composition comprising hair direct dyes/ KAO

Relevant legal provisions:
EPC Art. 123(2), 54, 56

Keyword:
Amendments - allowable (yes)
Novelty - (yes)
Inventive step - (yes)

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Case Number: T 0190/24 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 29 January 2026

Appellant: (Opponent)	L'OREAL 14 rue Royale 75008 Paris (FR)
Representative:	L'Oreal Service D.I.P.I. 9, rue Pierre Dreyfus 92110 Clichy (FR)
Respondent: (Patent Proprietor)	Kao Corporation 14-10, Nihonbashi Kayabacho 1-chome Chuo-Ku Tokyo 103-8210 (JP)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 7 December 2023 concerning maintenance of the European Patent No. 3684329 in amended form.**

Composition of the Board:

Chairman	A. Usuelli
Members:	D. Boulois
	L. Basterreix

Summary of Facts and Submissions

I. European Patent 3 684 329 B1 had been opposed under Article 100 (a) EPC on the grounds that its subject-matter lacked novelty and inventive step.

II. The present appeal lies from the decision of the opposition division finding that the patent in amended form meets the requirements of the EPC. The decision was based on the main request and the auxiliary request filed on 20 October 2023.

Claim 1 of the auxiliary request upheld by the opposition division (main request in appeal) read:

"1. A powder composition for treating keratin fibres, preferably human keratin fibres, especially human hair, characterized in that it comprises one or more direct dye(s) selected from HC Red 18, HC Blue 18 and HC Yellow 16, one or more alkanolamine(s) as alkalizing agent, and an organic and/or inorganic pulverulent excipient, wherein the compositions shown in the following Tables A and B are excluded:

Table A

	% by weight
Ammonium persulfate	20.0
Potassium persulfate	30.0
2-amino-2-methylpropanol	5.0
Ammonium bicarbonate	3.0
Sodium metasilicate	5.0
HC Blue 18	0.2
HC Red 18	0.1
Diatomaceous earth	ad 100.0

Table B

Ingredient	Powder composition A (wt.%)	Powder composition B (wt.%)
Paraffin oil	10.0	10.0
Corn starch	7.5	7.5
Sodium bicarbonate	2.0	2.0
Sodium metasilicate	2.0	2.0
2-amino-2-methylpropanol	0.5	0.5
Monoethanolamine HCl	-	5.0
HC Yellow 16	0.5	0.5
HC Blue 18	0.33	0.33
HC Red 18	0.15	0.15
Diatomaceous earth	Ad 100.0	

III. The documents cited during the opposition proceedings included the following:

D1: EP 3 453 380 A1, Publication date: 13/03/2019
D2: EP 3 427 720 A1, Publication date: 16/01/2019
D3: EP 3 685 816A1, Publication date: 29/07/2020
D4: WO 2017/041908 A1, Publication date: 16/03/2017
D5: EP 3 153 154 A1 , Publication date: 12/04/2017
D6: EP 3 153 153 A1, Publication date: 12/04/2017
D7: Priority document of the opposed patent
D8: Original description of D4
D9: Photographs of powder and dyed hair samples of the Examples and Comparative Examples of the opposed patent.

IV. According to the decision under appeal, the main request did not meet the requirements of Article 123(2) EPC in view of the disclaimer. The introduction of the Table from Example 2 of D2 into the amended claim in the form of Table B without indication of the type of percentages allowed multiple interpretations and as such removed more than necessary to restore novelty.

Claim 1 of the auxiliary request complied with the requirements of Article 123(2) EPC.

Example 7 of D4 did not anticipate the subject-matter of claim 1 of the auxiliary request.

With regard to inventive step, the powder composition of example 6 of D4 was the closest prior art. The composition A of example 6 differed from claim 1 in that it lacked an alkanolamine. The comparative data in the opposed patent, corroborated by D9, supported that the presence of an alkanolamine minimized the colour shifts when powders containing the claimed azo dyes were dissolved in an aqueous medium. The technical problem compared to the disclosure of D4 was seen as the provision of compositions in powder form that will exhibit similar colours when dissolved in aqueous medium. There was no teaching in D4, D5 or D6 to add alkanolamines into powder composition according to example 6 of D4. The subject-matter of claim 1 of the auxiliary request was inventive.

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

VI. With its reply to the appeal dated 12 August 2024, the patent proprietor (hereinafter the respondent), filed an auxiliary request which corresponded to the request filed during opposition proceedings.

VII. A communication from the Board, dated 25 September 2025, was sent to the parties. In it, the Board expressed its preliminary opinion that the main request met the requirements of Articles 123(2), 54 and 56 EPC.

VIII. Oral proceedings took place on 29 January 2026.

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

Main request- Amendments

Claim 1 according to the main request corresponded to claim 1 of the patent as granted amended by introducing a disclaimer excluding the composition of paragraph [0104] of D1 and powder compositions A and B of paragraph [0095] of D2. The disclaimer had been further amended by indicating that the percentages of the different ingredients of powder compositions A and B were weight percentages; the introduction of the weight % in table B of claim 1 could not find a basis in D2 and contravened the principles of Article 123(2) EPC. It was known that weight percentages were not necessarily used when referring to powder compositions. For example, volume percentages instead of weight percentages could also commonly be used.

Main request - Novelty

The subject-matter of claim 1 lacked novelty over example 7 of D4 which was also in powder form. The same considerations applied to claims 15, 17 and 18 according to the main request.

Main request - Inventive step

The subject-matter of claim 1 differed from example 6 of D4 in that the powder composition comprised one or more alkanolamine(s) as alkalizing agent. The comparative data of Table 1 of the patent were questionable (see par. [0118]). First, the dE values

indicated in table 1 of paragraph [0118] did not correspond to the values of the ΔE* parameter that were defined in paragraph [0118] of the opposed patent. Furthermore, the L* values indicated in tables 1 and 2 of the opposed patent were surprisingly negative whereas these values should always be positive.

Moreover, the potential technical effect observed with compositions comprising 2-amino methyl propanol over compositions comprising sodium carbonate could not be extrapolated to draw a conclusion regarding a potential technical effect observed with compositions comprising 2-amino methyl propanol over compositions comprising sodium metasilicate, as used in example 6 of D4.

Another important feature of the composition of example 6 of D4 was the presence of an additional dye different from HC dyes, namely Basic red 51. The composition claimed in claim 1 of the opposed patent did not exclude the presence of additional dyes different from the claimed HC Red 18 or HC Blue 18 or HC Yellow 16 dyes. Given the presence of a high amount of Basic red 51, the problem of colour difference would not occur and the problem could not be as defined by the respondent.

Consequently, the technical problem underlying the presently claimed was the provision of an alternative composition for colouring hair. The subject-matter of claim 1 did not involve an inventive step over D4 either alone or in combination with D5 or D6.

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

Main request - Amendments

The disclaimer based on Table B of D2 did not infringe Article 123(2) EPC, since wt.% was the only type of percentage used in D2. The skilled person thus could only understand the units as weight percentages, as it related to a powder composition; volume percentages did not make sense.

Main request - Novelty

Example 7 of D4 was an aqueous composition and not a powder. There was indeed a printing error in Example 7 of D4; D4 was a WO publication where on some pages, the last line was accidentally cut off, and the missing line indicates that the balance (to 100%) was water, as confirmed by the respective original application document D8.

Main request - Inventive step

D4 did not mention the problem of the contested patent, namely the colour change, and the exemplified composition of Example 6 seemed to address it by means of an entirely different approach, namely to use a second dye for masking, although this was not explicitly mentioned.

The alkanolamine as the distinguishing feature had the technical effect of achieving a solid-state colour of the claimed dyes which was similar to the final colour. This was demonstrated by the examples of the patent and by the data and coloured pictures provided in D9.

D5 and D6 referred to aqueous compositions and could not be combined with the teaching of D4. The claimed subject matter therefore was inventive over D4 even when additionally taking D5 and D6 into account.

XI. Requests

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

The respondent requested that the appeal be dismissed, alternatively that the decision under appeal be set aside and the patent be maintained according to the set of claims filed as auxiliary request with the reply to the statement of grounds of appeal.

Reasons for the Decision

1. Main request - Amendments

1.1 The appellant considers that the introduction of a limitation specifying that the percentages of the ingredients of the powder compositions A and B of Table B are expressed in wt% contravenes the principles of Article 123(2) EPC.

1.2 Claim 1 of the main request corresponds to claim 1 of the patent as granted amended by introducing a disclaimer excluding in particular the powder compositions A and B of paragraph [0095] of D2. The compositions A and B were disclosed in D2 without any mention of the units used for the amounts of components, while Table B as presented in claim 1 comprises now the mention "Powder composition A (wt.%)" and "Powder composition B (wt.%)".

The Board concurs with the conclusion of the opposition division that there is no reason in D2 to interpret the amounts in the table of paragraph [0095] in another way than weight percentages (wt.%).

First, the concentrations in D2 are given consistently in wt%, as for instance in paragraphs [0015], [0021], [0057], [0060], [0065], [0071], [0072], [0077], [0082] or [0084], and there is no alternative unit for the amounts disclosed in D2. Paragraph [0071] gives in particular the concentrations of the direct dyes present in the powder compositions of D2, such as in compositions A and B, in weight percentage (wt.%).

Then, D2 mentions also in a general way in paragraph [0073] that the composition of the invention may be mixed with a second composition, which can be a powder composition, as in the table of example 2. The concentrations of all compounds of this second powder composition are also given consistently in wt%, as disclosed for instance in paragraph [0076] for the alkalinizing agent.

Moreover, compositions A and B of example 2 of D2 are clearly anhydrous compositions, and there is no particular reason to consider that the amounts given therein might be in volume percentages, as argued by the appellant. Volume percentages are not employed, whether in the general disclosure of D2 or in the general context of powder cosmetic compositions. The Board agrees with the respondent that powders are difficult to dose on a volume basis, since the bulk density of a powder may be highly variable (depending on particle size, specific surface area, residual moisture, storage history, etc.) and greatly differs

from the actual density of the material in question. If the powder compositions of document D2 had been given in amounts of volume percentage, the complexity of this unit would have necessitated a clear reference or explanation for its measurement in D2, which is absent.

1.3 Consequently, the concentration units of the table in paragraph [0095] of D2 can only be in wt%, and claim 1 of the main request meets the requirements of Article 123(2) EPC.

2. Main request - Novelty

2.1 The appellant considers that claim 1 of the main request is not novel over example 7 of D4.

2.2 D4 discloses in example 7 a composition C comprising inter alia:
- HC red 18, HC Blue 18 and HC Yellow 16; and
- an alkanolamine: aminomethylpropanol; and
- an organic and/or inorganic pulverulent excipient: EDTA tetrasodium salt.

D4 does not indicate whether composition C is liquid or solid and, in the latter case, whether it is in powder form. However, it is indicated that the pH value of composition C is 3.5±0.1, and that "the hair was treated with the above composition C using the compositions A and B of the Example 1".

2.3 It is a generally applied principle for concluding that there is a lack of novelty that there must be a direct and unambiguous disclosure in the state of the art which would inevitably lead to subject-matter falling within the scope of the claim. In other words, it has

to be beyond doubt, that the claimed subject-matter was directly and unambiguously disclosed in a document. The existence of ambiguity or the need to interpret the disclosure of the document are generally indicators of novelty over the prior art.

In the present case, the Board concurs with the conclusion of the opposition division that the composition C of Example 7 of D4 cannot be novelty-destroying for claim 1 of the main request. There is no evidence, nor even any concrete indication, that composition C of example 7 of D4 is a powder composition. On the contrary, the disclosure of D4 suggests that composition C of example 7 is in fact an aqueous composition.

This is confirmed firstly by the presence of a pH value, which is a clear indication that composition C is an aqueous composition. In this regard the Board notes that there is no indication in D4 that composition C might be a powder composition to be further diluted in water, as argued by the appellant.

It is further confirmed by the reference in example 7 to example 1, which explains that the hair is treated with the composition C of example 7 using the liquid compositions A and B of example 1 and in the manner described in that example. Composition C of example 1 is itself an aqueous composition with a pH of 3.5±0.1, which is mixed with compositions A, B in a defined weight ratio. The reference to example 1 therefore provides an additional indication that the composition C of example 7 must likewise be an aqueous composition.

Finally, the liquid state of composition C is corroborated by the arguments of the respondent which

explained that the last line of the page disclosing example 7 of D4 was accidentally cut off in the published document D4. The original description of D4 (see document D8, page 21) indeed shows that a line is missing which should indicate that the remainder of composition C of example 7 is water up to 100%.

2.4 Consequently, the claimed subject-matter is novel over D4 and the main request meets the requirements of Article 54 EPC.

3. Main request - Inventive step

3.1 The claimed invention relates to stable powder compositions comprising specific hair direct dyes which are used for dyeing hair after mixing with one or more aqueous compositions. Said compositions solve the storage stability problem of direct dyes and overcome in particular the colour change properties of the dyes. The HC dyes included in the composition of claim 1 normally exhibit a strong colour difference when stored in powder and then later dissolved in aqueous medium before application. This property is confusing because it is impossible to predict the final colour of the customer's hair prior to dissolving the dyes. Thus, a powder composition using HC Red 18, HC Blue 18 and/or HC Yellow 16 as direct dye typically does not allow any conclusion as to the final colour of the dyed hair (see paragraphs [0001] to [0006] of the patent).

3.2 The appellant cites example 6 of D4 as starting point for the assessment of inventive step.

Example 6 of D4 is a powder composition comprising the dye HC red 18, diatomaceous earth, ammonium and potassium persulfate, sodium metasilicate, aerosil 380,

Basic red 51 and liquid paraffin. Sodium metasilicate is an alkalizing agent for this anhydrous composition (see D4, page 3, last par.).

The composition of Example 6 of D4 comprises Basic Red 51 as a second red dye beside HC Red 18 and is therefore expected to have a red colour also in the solid state.

The subject-matter of claim 1 of the opposed patent differs from example 6 of D4 in that the powder composition comprises one or more alkanolamine(s) as alkalizing agent instead of sodium metasilicate.

3.3 The opposition division defined the problem in its decision as the provision of compositions in powder form that will exhibit similar colours when dissolved in aqueous medium. A similar technical problem is proposed by the respondent.

The appellant defines the problem as the provision of an alternative composition for colouring hair.

3.4 The examples of the patent and the experiments D9 were cited in support of a technical effect.

3.4.1 The opposed patent encompasses comparative data in table 1 of paragraph [0118].

		Example	Comparative Example	Example	Comparative Example	Example	Comparative Example
		5	5	6	6	7	7
Composition (% by weight)	HC Blue 18	2.0	2.0	-	-	-	-
	HC Red 18	-	-	2.0	2.0	-	-
	HC Yellow 16	-	-	-	-	2.0	2.0
	2-amino methyl propanol	8.4	-	8.4	-	8.4	
	Sodium carbonate	-	8.4		8.4		8.4
	Diatomaceous earth	Ad 100.0	Ad 100.0	Ad 100.0	Ad 100.0	Ad 100.0	Ad 100.0
	Weight ratio of dye to alkalizing agent	0.24	0.24	0.24	0.24	0.24	0.24
	(L*,a*,b*,h) of powder	L*:-50.22 a*: 6.81 b*:-23.46 h: -14.12	L*: -27.07 a*: 15.15 b*: -1.04 h: -7.90	L*: -45.82 a*: 43.11 b*:-0.13 h: -13.54	L*: -24.50 a*: 27.27 b*: 20.28 h: -7.45	L*: -21.52 a*: 25.81 b*: 56.44 h: -4.64	L*: -3.21 a*:-3.18 b*: 36.26 h: 1.06
Evaluation	(L*,a*,b*,h) of hair after hair dyeing	L*:-56.30 a*: 14.81 b*:-45.85 h: -43.05	L*: -58.28 a*: 13.70 b*: -42.07 h: -40.54	L*: -55.01 a*: 42.70 b*: 0.90 h: -29.37	L*: -54.98 a*: 42.51 b*: 0.96 h: -28.81	L*: -17.54 a*: 36.69 b*: 67.87 h: -15.70	L*: -12.68 a*: 24.18 b*: 68.28 h: -10.78
	dh	28.9	32.6	15.8	21.4	11.1	11.8
	dE	18.3	42.1	6.73	27.0	13.4	37.0

As it can be seen from Table 1, examples 5-7 and the corresponding comparative examples differ in the presence of 2-amino methyl propanol, an alkanolamine(s) alkalizing agent, which is replaced by sodium carbonate in the comparative examples. The results of Table 1 indicate that **the presence of alkanolamines reduced the colour difference between the powder composition and the dyed hair for all three HC dyes. This effect is evidenced by the low dE values observed for the inventive powders, in contrast with the higher dE values observed for the comparative examples.** These values show that powder compositions of the present invention, namely the compositions of examples 5, 6 and 7 have a colour which is very similar to the final colour on the hair whereas the comparative compositions exhibit large colour differences between the powder form and the colour on the hair. Thus, this effect allows clearly for better predicting the hair colour when using the powder composition of the present invention.

3.4.2 D9 is a reproduction of the data presented in Table 1 of the patent, supplemented with an additional photograph illustrating the colour of the different

powder compositions and the resulting colour obtained on the hair.

D9 shows that the colour of the powder and that of the hair after dyeing are very similar when using the powders of examples 5-7 containing 2-aminomethyl propanol. In contrast the colours appear less similar when a powder containing sodium carbonate is used. The photograph in D9 correlate with the actual measured property in Table 1 of the patent and confirm the effect of the alkanolamine as alkalinizing agent over sodium carbonate, namely providing similar colours in powder and after application on the hair.

3.4.3 The appellant contested the relevance of the data of Table 1. According to the appellant, the dE values indicated in table 1 of paragraph [0118] do indeed not correspond to the calculated values of the ΔE parameter as defined in paragraph [0118] of the opposed patent. The following table provided by the appellant gives the ΔE values that have been calculated by the appellant based on the L*, a*, b* values disclosed in Table 1 of paragraph [0118].

Example	dE	ΔE*
Example 5	18.3	24.5
Comparative Example 5	42.1	51.6
Example 6	6.73	9.26
Comparative Example 6	27.0	39.2
Example 7	13.4	16.3
Comparative Example 7	37.0	43.2

Moreover, the L* values indicated in Table 1 and 2 of the contested patent are negative, whereas these values should always be positive, which casts doubts on the results of Table 1.

3.4.4 The Board notes that even the data submitted by the appellant confirm that the compositions of the invention lead to a reduction in the colour difference between the powder and the colour obtained on the hair.

With regard to the negative values, the respondent explained that Table 1 indeed includes a clerical error, since the L* values should be positive rather than negative; yet, the data on the individual colour coordinates a* (green-red) and b* (blue-yellow) is correct and allows the appreciation of the colour differences. The error has therefore no incidence in the evaluation of the effect.

In the Board's view, the exact numerical values in Table 1 of the opposed patent are not crucial for determining the effect of the present invention, since the respective colour differences are readily apparent by visual inspection, as can be clearly seen in the photograph of D9.

3.4.5 The Board also considers that the improved technical effect of the inventive compositions, as demonstrated in comparison with examples containing sodium carbonate as alkalinizing agent would likewise be expected in respect of compositions containing sodium metasilicate as alkalinizing agent, such as the composition disclosed in example 6 of D4.

The Board considers it technically plausible that sodium metasilicate behaves in the same way as sodium carbonate, and is likewise incapable of achieving the effect of the invention. The colour change of HC Red 18/HC Blue 18/HC Yellow 16 on the hair comes from the deprotonation of the phenolic OH by the action of the

alkalizing agent alkanolamines. Alkanolamines are liquids or low-melting solids which have a high vapour pressure and therefore can react with the direct dye in the solid state, deprotonating the same and achieving the change to the final colour in the solid state already. In contrast, sodium carbonate and sodium metasilicate both are non-volatile salt-like solids with high melting point, which have no vapour pressure at all, and which react as an alkalizing agent only after the addition of water but are not capable of deprotonating the direct dye in the solid state, and therefore cannot switch the colour of HC Red 18/HC Blue 18/HC Yellow 16 to the final colour as exhibited on the hair.

Accordingly, the experiments of the patent, in particular the data of Table 1, support the presence of an improvement over the composition of example 6 of D4.

3.4.6 The appellant argued that no comparison was made with the composition of example 6 of D4 and that this composition would maintain the same colour before and after hair application, as the additional dye agent Basic red 51 would mask the colour of HC Red 18.

However, in the Board's view, the colour masking effect of Basic red 51 present in the composition of example 6 of D4 does not alter the effect of the alkanolamine with respect to the colour of HC red 18.

As argued by the respondent, the use of two specific red dyes, namely the HC red 18 dye and the Basic red 51, in the composition of example 6 of D4 makes it possible to obtain a particular red shade on the hair. Even if the Basic red 51 may exert some colour-masking effect, this does not change the fact that the

composition still contains HC red 18, which has a solid-state colour different from the shade obtained on the hair.

D4 does not give any indication regarding the colour of the powder composition of example 6 and the colour obtained on the hair by application of the composition. In the absence of alkanolamine as alkalizing agent, it is however to be expected that the red shade of the powder composition is not the same red shade obtained on the hair, due to the presence of the HC red 18 dye. This is credibly illustrated by example 6 of the patent and the comparative example 6 shown in Table 1 of the patent. Accordingly, the appellant's argument that no improvement would be achieved over the composition of example 6 of D4 is not persuasive.

There is therefore a credible technical effect vis-à-vis D4 despite the additional presence of Basic red 51.

3.4.7 In view of the above, the problem over D4 has to be defined in the same way as the opposition division in its decision, namely the provision of compositions in powder form that will exhibit similar colours when dissolved in aqueous medium

3.5 With regard to obviousness, the appellant mentioned documents D4, D5 and D6.

3.5.1 D4 discloses the use of alkanolamine as alkalizing agent in claim 5. This claim makes however reference to a pH value in the range of 1 to 5, which shows that the addition of an alkanolamine was not envisaged in a powder composition.

Moreover, the technical problem underlying the claimed invention is not addressed in D4. Consequently, the skilled person, starting from example 6 and wishing to solve this problem, would not be guided by D4 to alter its composition in a manner that would result in the claimed subject-matter.

3.5.2 D5 in paragraph [0030] and D6 in claim 1 teach that 2-amino-2-methylpropanol may be used as alkalizing agent in a hair colouring composition comprising HC Red 18 and/or HC Blue 18 and/or HC Yellow 16.

D5 and D6 use however alkanolamines in aqueous compositions with different dyes and do not provide any hint regarding the usefulness thereof for preventing colour change in powder compositions.

3.5.3 Consequently, the claimed solution is not obvious and claim 1 of the main request meets the requirements of inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

B. Atienza Vivancos A. Usuelli

Decision electronically authenticated