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**Datasheet for the decision  
of 18 February 2016**

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**Language of the proceedings:** EN

**Title of invention:**  
Conditioning composition for keratin fibres

**Patent Proprietor:**  
Kao Germany GmbH

**Opponent:**  
Henkel AG & Co. KGaA

**Headword:**  
Coated mica hair conditioner / KAO

**Relevant legal provisions:**  
EPC Art. 52(1), 56

**Keyword:**  
Inventive step - (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

European Patent Office  
D-80298 MUNICH  
GERMANY  
Tel. +49 (0) 89 2399-0  
Fax +49 (0) 89 2399-4465

Case Number: T 1889/12 - 3.3.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.06**  
**of 18 February 2016**

**Appellant:** Kao Germany GmbH  
(Patent Proprietor) Pfungstädter Strasse 92-100  
64297 Darmstadt (DE)

**Respondent:** Henkel AG & Co. KGaA  
(Opponent) Henkelstrasse 67  
40589 Düsseldorf (DE)

**Representative:** Henkel AG & Co. KGaA  
CLI Patents  
Z01  
40191 Düsseldorf (DE)

**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted on 23 April 2012 revoking European patent No. 1932506 pursuant to Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman** B. Czech  
**Members:** P. Ammendola  
S. Fernández de Córdoba

## Summary of Facts and Submissions

I. This appeal is against the decision of the Opposition Division revoking European patent No. 1 932 506.

II. Claims 1, 10 and 11 of the granted patent read as follows:

"1. *Conditioning aqueous composition for keratin fibres especially for human hair characterised in that it comprises at least one silicone compound at a concentration of 0.01 to 10% by weight, and at least one colour effect pigment consisting of synthetic mica coated with metal oxide or oxides and having a volume particle size distribution of 1 to 750  $\mu$  at a concentration of 0.01 to 10% by weight, calculated to total composition.*"

"10. *Process for conditioning keratin fibres especially human hair characterised in that after washing with a cleansing composition or wetting, a composition according to claims 1 to 8 is applied and after processing period of 30 sec to 30 min rinsed off.*"

"11. *Use of a composition according to claims 1 to 8 for enhancing shine of keratin fibres especially human hair.*"

Dependent claims 2 to 9 define preferred embodiments of the composition of claim 1.

III. The granted patent had been opposed on the grounds of lack of novelty and lack of inventive step (Article 100(a) EPC).

During the opposition proceedings reference had been made, *inter alia*, to the following items of evidence:

D3 : US 2004/0115155 A1,

D6 : EP 0 723 997 A1,

D7 : WO 2005/065632 A1,

D8 : Product sheet "Flamenco (R) Superpearl", Engelhard Corporation; REV-6 (6/17/00), and

D10: "Trial report" submitted by the Patent Proprietor with letter of 20 February 2012.

IV. In the appealed decision, the Opposition Division found that the claimed subject-matter was novel but did not involve an inventive step for the following reasons:

- The technical problem indicated in paragraph [0001] of the patent in suit was to provide a conditioning and shine enhancing composition for keratin fibres.
- D3 was the closest prior art. It disclosed, in Examples 5 and 7 (see paragraph [0181] and the table bridging page 14 and 15) hair conditioning compositions for rinse-off or leave-on applications. These compositions comprised a silicone compound and an "Aesthetic Material" that provided the benefit of nacreous and/or marbleized looks to the compositions. The "Aesthetic material" used in these examples was described in paragraph [0200] of D3 as a mixture of mica and titanium dioxide commercialised under the tradename "Flamenco super pearl" (referred to herein below as **Superpearls**).

- As confirmed by D8, these Superpearls had a mean particle size comprised between 22.7 and 26.7  $\mu\text{m}$  and were made using natural mica.
  
- The subject-matter of claim 1 thus differed from this prior art only in that the former is a pigment based on **synthetic** mica, more particularly particle of **synthetic mica** coated with **metal oxide(s)** (herein below **MOCS mica**).
  
- D6 and D7 both taught that such MOCS mica pigments led "to better results in terms of shine". D6 and D7 provided examples of cosmetic compositions in the form of foundation (D6), nail lacquers or shampoos (examples 1 and 18 of D7) "exhibiting a better gloss, brightness and glint". The trial report D10 merely showed "what could be fully expected from the reading of D6 or D7". Claim 1 of the patent in suit was not limited to rinse-off compositions, it actually encompassed leave-on and rinse-off compositions. Hence, "the properties observed for the compositions itself should be as well observed on the hair fibres, regardless the substrate". There was "no reason for the skilled man to doubt that the improved gloss which has been shown on the skin and on the nails will also be obtained for leave-on hair products".

V. In its statement of grounds of appeal, the **Appellant** (Patent Proprietor) contested this finding. It nevertheless also filed five sets of amended claims as Auxiliary Requests 1 to 5.

VI. In its reply, the **Respondent** (Opponent) rebutted the Appellant's reasoning and maintained that the claimed subject-matter was obvious in the light of D3 taken in

combination with D6 or D7. In this connection, it also referred to the following newly filed document, supposed to illustrate common general knowledge:

D12: US 2005/0227880 A1.

- VII. With a further letter of 25 September 2015, the Appellant filed retyped versions of the Auxiliary Requests 1 to 5 filed with the statements of grounds of appeal, without commenting on the substance of the case.
- VIII. Oral proceedings were held in the absence of the Respondent, foreshadowed in its letter of 1 October 2015. The hearing focused on the issue of inventive step (main request) over document D3. The relevance of documents D6 and D7 was also addressed.
- IX. At the oral proceedings, the Appellant requested that the decision under appeal be set aside and the patent be maintained as granted (**Main Request**) or, in the alternative, that the patent be maintained in amended form on the basis of one of the sets of claims filed as Auxiliary Requests 1 to 5 with letter of 25 September 2015.
- The Respondent had requested in writing that the appeal be dismissed.
- X. The arguments of the Appellant of relevance here, i.e. regarding inventive step (claims as granted) in the light of documents D3, D6, D7 and D12, may be summarized as follows:

D3 could be regarded the closest state of the art. The technical problem addressed was, *inter alia*, the

achievement of a very good shine of the treated hair. The only difference between the subject-matter of claim 1 and the closest prior art (Example 5 or 7 of D3) was the synthetic origin of the mica in the pigment contained in the former. It was undisputed that such difference rendered plausible that the shine characteristics of the hair treated with the patented composition were superior to those obtained according to the closest prior art. Hence, the technical problem posed had been solved.

Contrary to the finding of the Opposition Division the achieved very high level of hair shine was, however, not predictable, even taking into account D6 or D7. These documents did not disclose any hair care composition that provided improved shine to the hair. D6 and D7 essentially only taught that MOCS mica pigments provided improved shine to the composition (itself) comprising these pigments, similarly to the Superpearls in the compositions of D3.

Although most of the cosmetic compositions disclosed in D6 or D7 - such as foundation creams, nail polishers or lacquers, lipsticks or mascaras - also necessarily produced improved shiny appearance to the substrate on which they were applied, this effect was only was a predictable consequence of the improved shine of the compositions themselves. Indeed, the use of these cosmetic compositions implied to spread a relatively large amount (relatively thick layer) of composition on a relatively small surface of skin, lips, etc. As a case in point example 19 of D7 exclusively disclosed improved properties (gloss, brightness etc.) of the exemplified hair and body gels and shampoos themselves, tested by spreading a certain amount of the composition on a card substrate.



Improvements in terms of hair shine could not plausibly be expected as well. Indeed, upon use, these hair cleansing compositions, as in the case of rinse-off conditioning compositions, necessarily left at most a fraction of the initially applied MOCS mica on a very large surface of application (hair). The teachings in D6 or D7 did not even justify the shine effects of the MOCS mica pigments on hair in the particular case of leave-on conditioning compositions. Considering the difference in surface area between hair and lips/nails/skin being very high, it was impossible to reach on the surface of the hair a density of pigment particles comparable to that obtained when applying the other different cosmetic compositions disclosed in D6 or D7 on the surface of lips/skin/hair.

As a matter of fact, one willing to provide on conditioned hair an amount of MOCS mica comparable to that resulting from the application of foundation creams, lipstick, mascara or nail lacquer had to use extremely large amounts of conditioner composition, impracticable even in the case of leave-on hair conditioning compositions.

The person skilled in the art considering D6 or D7 would be aware of this large difference in surface and would, thus, not expect that teachings possibly derivable therefrom as regards an improvement in gloss etc. achievable when applying the disclosed composites on nails, lips or face skin would be transposable to aqueous hair conditioning compositions.

Thus, the claimed subject-matter involved an inventive step, even in view of the combination of D3 with any of D6 or D7.

XI. The counter-arguments of the Respondent of relevance here may be summarized as follows:

The patented subject-matter lacked of inventive step in view of the combination of D3 with any of D6 or D7. D12 was cited as evidence of common general knowledge. The only difference between the patented composition and the closest prior art disclosed in Examples 5 and 7 of D3 was the synthetic origin of the MOCS mica. In the light of this prior art, the technical problem solved consisted in making available hair conditioners that provided improved shine characteristics to the hair.

This solution was obvious to the skilled person in the light of D6 and D7, which both disclosed novel pearlescent MOCS mica that provided better gloss, brightness and glint than the conventional pearlescent pigments on the basis of natural mica (D6: page 2, lines 33 to 49 and D7: page 3, lines 6 to 31). D6 and D7 contained several examples describing specifically cosmetic products comprising such pigments (D6, Claim 27 and Examples 32, 33, 37, 38 and D7: Page 3 lines 19 to 29 and examples). In particular, Example 18-B of D7 disclosed a hair shampoo, i.e. a rinse-off hair care composition, with increased shine (see example 19) comprising MOCS mica with a mean particle size of from 20 to 95  $\mu\text{m}$ .

It was common general knowledge that metal oxide coated mica pigments not only provided a pearlescent shine to the compositions (themselves) containing them, but that such shine may also be conferred to the substrate treated by depositing the mica pigments on its surface. This latter effect (shine) may even persist after the composition is washed off. In this connection reference

was made to D12 (see page 3, lines 18 and 19, of the reply to the statement of grounds of appeal) as evidence of such common general knowledge. According to D12 ([0002], [0006], [0052] and [0055]), "optical modifiers", e.g. mica pigments of natural or synthetic origin may present in an amounts of 0.2 to 1 % by weight in cleansing compositions to be applied to skin or hair and then washed off, providing an increased shine to the skin.

Hence, the skilled reader of D7 would conclude that the improved gloss reported in D7 not only as a property of the cosmetic compositions containing MOCS mica pigments *per se*, but also as a property of the lips/nails/skin treated with such compositions, should also be obtainable when treating hair with (leave-on or rinse-off) hair-care products containing such pigments, e.g. when washing hair with the shampoo of Example 18-B of D7 and, even more so, when treating hair with a leave-on conditioning composition according to D3, if supplemented with MOCS mica.

The skilled person would not be deterred from such conclusion by the large surface of hair since cosmetic compositions containing ingredients based on synthetic or natural mica were already generally known to provide shine effects to skin or hair even when used in very small amounts.

Hence, it was obvious to the skilled person to include some of the synthetic mica pigments as disclosed in D6 or D7 into compositions as disclosed by D3 in order to provide treated hair with an increased shine.

## **Reasons for the Decision**

### *Admissibility of document D12 into the proceedings*

1. Document D12 was filed by the Respondent with its reply to the statement of grounds of appeal, supposedly to illustrate common general knowledge.

The Appellant did not object to the admittance of D12. Moreover, the filing of D12 did not raise any complex new issue.

The Board therefore decided to admit document D12 into the appeal proceedings (Article 114(2) EPC and Article 12(4) RPBA).

### *Appellant's Main request (claims of the patent as granted) Inventive step*

2. In its reply to statement of grounds of appeal, the Respondent did not maintain its earlier novelty objections against the claims as granted. It only maintained an inventive step objection based on combinations of D3, taken as the closest prior art, with any of D6 or D7, and taking into account content of D12 to be considered as common general knowledge.
3. The invention

The patent in suit relates to aqueous compositions for conditioning and enhancing the shine of keratin fibres, especially human hair (claim 1), a process of conditioning keratin fibres involving this composition (claim 10) and the use of the composition for enhancing the shine of keratin fibres (claim 11).

4. The closest prior art
  - 4.1 It is common ground between the parties that document D3 is to be considered as the closest prior art for the purpose of assessing inventive step. Considering the similarities between D3 and the patent in suit as regards the goals addressed and the subject-matters involved, the Board sees no reason to take another stance.
  - 4.2 Indeed D3 discloses hair conditioning compositions for rinse-off or leave-on applications and, in particular, describes (in Examples 5 and 7) two such compositions comprising a silicone and "Superpearls" made of mica and titanium (Examples 5 and 7 of D3). These "Superpearls" are added to provide "a benefit of pealized [sic], macreous [sic], and/or marbleized looks to the compositions of the present invention" (see [0150] of D3). This is not in dispute.
    - 4.2.1 It is also common ground between the Parties that, as apparent from e.g. D8, said "Superpearls" have a mean particle size of 22.7 -26.7  $\mu\text{m}$  and the pigment contained therein is not based on synthetic mica, i.e. is not a MOCS mica pigment.
    - 4.2.2 The Board also notes that D3 in [0112] expressly mentions "enhancing the shine characteristics of hair" as an effect of the incorporating "highly arylated silicone compounds" into the hair conditioning compositions described.
  - 4.3 In view of the above the Board sees no reason to deviate from the finding of of the Opposition Division, not disputed by the Parties, that each of Examples 5 or 7 of D3 represents a most appropriate starting point

for the assessment of inventive step.

5. The technical problem

According to the Appellant, even starting from D3 (not acknowledged in the patent in suit) as the closest prior art the technical problem was to provide compositions with improved conditioning effects, in particular improved shine of the hair treated.

6. The solution

As a solution to this technical problem the patent in suit proposes the aqueous conditioning composition of claim 1, that is characterized in particular (emphasis added by the Board) in that it comprises "*at least one silicone compound at a concentration of 0.01 to 10% by weight, and at least one colour effect pigment consisting of **synthetic** mica coated with metal oxide or oxides and having a volume particle size distribution of 1 to 750  $\mu$  at a concentration of 0.01 to 10% by weight, calculated to total composition.*"

7. Success of the solution

7.1 It emanates in particular from paragraphs [00059], [0063] and the comparative tests described in the patent examples 2 to 8 (see in particular paragraphs [0063], [0067], [0070] and [0071]) that the level of hair shine achieved by compositions according to claim 1 (herein below also indicated as the **achieved level of hair shine**) is superior to that obtainable by other hair conditioning compositions. More particularly, the compositions of the invention exemplified in the patent examples 2 to 8 are described as providing "*more shimmery shine*" than corresponding

comparative compositions only differing therefrom by the absence of the MOCS mica. Further evidence of this was provided in form of the experimental comparison in D10 between another conditioning composition according to claim 1 and a comparative composition only differing therefrom by the absence of the MOCS mica.

The compositions claimed are thus excellent aqueous hair conditioning composition also providing superior shine to the treated hair.

7.2 The Board notes that D3 neither contains information as to any level of hair shine provided by the compositions of Examples 5 and 7, nor any teaching possibly suggesting that these specific, exemplified compositions are actually effective in improving the shine of the treated hair. According to D3, the "Superpearls" are used in these compositions as "Aesthetic material" and, thus, can only be assumed to provide pearlized, nacrous and/or marbled appearance to the compositions, but not necessarily to the treated hair. The silicone present in the compositions according to these these Examples it is not a "highly arylated silicone compound" (i.e. of the shine-providing type mentioned in [0112] of D3; see 4.2.2 *supra*) but rather an hydrophilic silicone with no aryl group (see [00195] to [0198] of D3).

7.3 Therefore, in the absence of evidence to the contrary, the Board accepts as plausible that the achieved level of hair shine is superior to that provided by the aqueous hair conditioning compositions of D3/examples 5 and 7.

7.4 Thus, the Board concludes that the technical problem posed is solved by compositions according to claim 1.

8. (Non-)Obviousness

8.1 The reasoning in the decision under appeal is essentially that the improved shine characteristics of the hair achieved by the claimed composition were predictable in view of a combination of D3 with D6 or D7. More particularly, the person skilled in the art would have expected that the improved gloss, brightness and glint achievable by the use of pigments based on synthetic mica instead of natural mica according to D6 and D7 when incorporated into cosmetic compositions such as foundation creams (D6) and nail lacquers or shampoos (D7) could also be provided to hair treated with leave-on hair products such as the hair conditioning compositions of D3. The Opposition Division stressed in particular that there would be no reason for the skilled person to doubt "that the improved gloss which has been shown on the skin and on the nails will also be obtained for leave-on hair products". The Respondent presented substantially the same line of reasoning.

8.2 Combination of D3 with D6 or D7

8.2.1 The Board notes that neither the decision under appeal nor the Respondent's reply to the statement of grounds contains an indication as to any plausible reason for which the skilled person seeking to solve the technical problem posed would actually have considered document D6 or document D7 at all.

The Board is not convinced that a skilled person seeking to provide shine-improving hair conditioners would actually search for useful hints in documents pertaining to the field of cosmetic compositions not even implicitly touching upon the issue of hair shine.



8.2.2 Moreover, the Board notes that D6 does not even mention hair, but only refers to cosmetic products, exemplified in foundation creams (Examples 33 and 38 of D6) and lipsticks (Examples 32 and 37 of D6). In D7 the sole actually exemplified compositions specifically intended for treating hair are the "hair and body gel" and the "shampoo" described in examples 17 and 18 of D7. These are cleansing (hence ("rinse-off") compositions, tested only with regard to the gloss, brightness and glint they provide (see tests described in Example 19 of D7) using the same kind of test (spreading a controlled amount on paper cards) that is also used for assessing the optical properties ("leave-on") cosmetic compositions, such as the nail lacquers of Example 1 or the mascara of Examples 7 to 9).

8.2.3 The Board thus holds that the skilled person reading D7 will only gather therefrom that the cosmetic compositions described therein as being applicable to hair display improved gloss, brightness and glint properties by themselves, and not that they provide such properties to the hair cleansed therewith.

8.2.4 If only for this reason, the Board considers that the skilled person starting from a hair conditioning composition as described in D3 and seeking for ways to provide the conditioned hair with an improved shine has no reason to take into consideration D6 or D7, let alone to modify the compositions of examples 5 or 7 of D3 by adopting a particular measure disclosed in D6 or D7.

8.3 Hence, for the Board, the above-resumed reasoning of the decision under appeal and the substantially identical attack by the Respondent, based on the combination of D3 with D6 or D7, are not convincing.

- 8.4 However, for the sake of completeness, the Board additionally stresses that even if the person skilled in the art would have considered combining the respective teachings D3 and D6 or D7, providing a composition as claimed would not have been obvious to him.
- 8.4.1 Indeed, as already indicated above, D6 and D7 do not refer to hair shine at all, not even implicitly or indirectly.
- 8.4.2 Moreover, as convincingly argued by the Appellant, hair care compositions form a specific class of cosmetic products. In formulating such products, it must be taken into account (*inter alia*) that the surface of the substrate (keratin fibres, in particular hair) to be treated is very large, as opposed to e.g. skin or the surface of nails or lips.

The Board accepts that this implies, even in the case of leave-on hair conditioning compositions, that the number of the mica pigment particles deposited (and retained) thereon per surface unit of the substrate by the application thereto of such pigmented compositions will be much smaller than that resulting from applying pigmented cosmetic compositions to other types of substrates, e.g. when applying a nail lacquer, or a foundation cream, or a lipstick, etc.

The Board is thus convinced that in view of the much larger surface of hair, the skilled person reading D6 or D7 would not consider that the ability of MOCS mica pigments to improve shine should also be observable on the hair treated with hair care compositions according to claim 1 at issue containing such pigments, even considering *arguendo* that D6 and D7 disclose that MOCS

incorporated into the cosmetic compositions not only increase the shine of the compositions themselves, but also of the skin, lips and nails treated therewith.

8.4.3 The much larger surface of the hair, compared to the surface of skin, nails, lips, etc. to be treated is thus a reason for considering that the disclosure in D6 or D7 does not imply that MOCS mica pigments would also provide a significative shine increase on hair, as compared to any shine increase possibly provided by the natural mica pigments containing compositions of examples 5 and 7 of D3.

8.5 Document D12

8.5.1 According to the Respondent, D12 illustrated that cosmetic compositions containing pigment ingredients based on either synthetic or natural mica (even in very small amounts) were already generally known to provide shine to the treated substrate surface even.

8.5.2 The Board firstly notes that D12 is a single patent document and may, therefore, only be considered as being representative of some common general knowledge to a limited extent.

8.5.3 Moreover, the actual invention according to D12 relates only to cleansing compositions which (after wash-off) modify the appearance of the skin (see e.g. claims 2 or 29 of D12). In particular, a "shine" effect is only mentioned in respect of treated skin, as clearly stated in paragraph [0006].

Hence, for the Board, such alleged common general knowledge could at most play a role in determining the plausibility of the expectation that e.g. the hair and

body gel of Example 17 of D7 could provide shine to the washed skin.

8.5.4 However, in the absence of further information, not even the actual teaching of D12 permits to predict that the hair and body gel of Example 17 of D7 would also improve the shine of hair cleansed therewith or that such improvement would also be provided by the shampoo of Example 18-B of D7. Indeed, D12, like D7, contains no information element suggesting that the wash-off cleansing compositions disclosed therein would provide comparable superficial densities of the mica pigments on skin and on hair.

8.5.5 Nor has the Respondent provided evidence possibly justifying the expectation that the superficial density of the mica pigments left on the skin after washing off the cleansing compositions of D12 would be at least comparable to that obtainable on the hair treated with a leave-on hair conditioning composition.

8.5.6 In conclusion, alleged common general knowledge possibly corresponding to the technical teaching in this document would be too vague to establish that the skilled person would have reasons to disregard the large difference in the extent of surface between hair and any of skin, nails, lips, etc. when assessing the possible implications of the disclosure of D6 or D7.

8.6 Hence, summing up, the Board concludes that the person skilled in the art starting from the compositions of D3/examples 5 and 7, was not induced by the prior art or common general knowledge invoked to solve the technical problem of providing conditioning compositions for keratin fibres such as hair providing improved shine by adding to the compositions of D3 with

the MOCS mica pigments disclosed in D6, D7 and D12, or by at least partly replacing the Superpearls contained therein by such MOCS mica pigments.

9. The Board concludes therefore that the subject-matter of claim 1 involves an inventive step. Consequently, the more preferred compositions according to dependent claims 2 to 9, the process according to claim 10 involving the inventive composition of claim 1 and the use of the latter according to claim 11 likewise involve an inventive step.
  
10. Accordingly, in the Board's judgement, the patent as granted is not objectionable on the ground of lack of inventive step (Article 100(a) EPC).

**Order**

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

1. The decision under appeal is set aside.
2. The patent is maintained as granted.

The Registrar:

The Chairman:



D. Magliano

B. Czech

Decision electronically authenticated