

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**
(PCT Rule 43*bis*.1)

To: see form PCT/ISA/220

Date of mailing (day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference see form PCT/ISA/220

FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/EP2017/066570
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International filing date (day/month/year) 04.07.2017
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International Patent Classification (IPC) or both national classification and IPC INV. A61Q5/02 A61Q19/10 A61K8/26 A61K8/34 A61K8/41 A61K8/44 A61K8/73 A61K8/891 A61K8/898

Applicant L'OREAL

<p>1. This opinion contains indications relating to the following items:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Rule 43<i>bis</i>.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input checked="" type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application <p>2. FURTHER ACTION</p> <p>If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1<i>bis</i>(b) that written opinions of this International Searching Authority will not be so considered.</p> <p>If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.</p> <p>For further options, see Form PCT/ISA/220.</p>

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Date of completion of this opinion see form PCT/ISA/210
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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed.
 - a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>17</u>
	No: Claims	<u>1-16, 18, 19</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-19</u>
Industrial applicability (IA)	Yes: Claims	<u>1-19</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1 JP 2006 104149 A (LION CORP) 20 April 2006 (2006-04-20)
- D2 JP 2004 262805 A (LION CORP) 24 September 2004 (2004-09-24)
- D3 US 2009/233825 A1 (GILES COLIN CHRISTOPHER DAVID [CN] ET AL) 17 September 2009 (2009-09-17)
- D4 DATABASE GNPD [Online]
MINTEL; 31 July 2012 (2012-07-31),
ANONYMOUS: "Thickening shampoo",
Database accession no. 1824403
- D5 US 5 846 549 A (BEAUQUEY BERNARD [FR] ET AL) 8 December 1998 (1998-12-08)
- D6 EP 2 153 818 A2 (EVONIK GOLDSCHMIDT GMBH [DE]) 17 February 2010 (2010-02-17)
- D7 EP 0 858 794 A2 (KAO CORP [JP]) 19 August 1998 (1998-08-19)
- D8 DE 10 2014 224770 A1 (HENKEL AG & CO KGAA [DE]) 15 October 2015 (2015-10-15)
- D9 DE 10 2013 226269 A1 (HENKEL AG & CO KGAA [DE]) 2 July 2015 (2015-07-02)

1 Objections under Article 33(2) PCT (Novelty)

The present application does not meet the criteria of Article 33(2) PCT, because the subject-matter of claims 1-16, 18 and 19 is not new.

- 1.1 D1 relates to the provision of hair conditioning compositions comprising at least a cationic surfactant, an amphoteric surfactant and a higher alcohol (claim 1). Exemplified compositions (page 10, examples 6 and 7) comprise
 - 0,8% of the cationic surfactant behenyl trimethylammonium chloride (row 3)
 - 1,7% of the amphoteric/zwitterionic surfactant lauroyl amidopropyl betain

(row 1)

- 0,6% of the silicone dimethylsilicone (row 13) and 0,1% of the silicon amino modified silicon (row 14)
- 0,5% of the cationic polymer cationic starch (row 8) or cationic cellulose (row 9)
- 2% of the fatty alcohol behenyl alcohol (row 4)
- 0,02% of the clay bentonite (row 12).

The composition provides good smoothness to hair (last row).

The subject-matter of claims 1-14, 16, 18 and 19 is therefore not new.

- 1.2 D2 relates to the provision of hair cleaning composition that exhibit a good conditioning effect (par. 1). As a solution to this problem, D2 proposes (page 19, composition 3) a composition comprising
- 2% of the the cationic surfactant stearyl trimethylammonium chloride (compound 6)
 - 14,5% of the amphoteric/zwitterionic surfactants lauryl amidopropyl betaine (compound 24) and lauryl di-mathyl aminoacetyl betaine (compound 25)
 - 2% of the silicone dimethyl silicone (compound 1)
 - 0,5% of the cationic polymer cationic modified silicone (compound 4)
 - 8% of the fatty alcohol stearyl alcohol (compound 11)
 - 0,3% of the clay bentonite

The composition confers good hair smoothness after drying (par. 95).

The subject-matter of claims 1-6, 9, 12-16, 18 and 19 is therefore not new.

- 1.3 D3 relates to the provision of conditioning shampoos (par. 6-7) and discloses as a solution to this problem a composition comprising
- 0,1% cetyl trimethylammonium chloride
 - 1,6% cocamidopropyl betain
 - 2% dimethiconol
 - 0,2% guar hydroxypropyl trimonium chloride
 - 2% cetyl alcohol
 - 0,1% of the clay quaternium-18 bentonite (table 1, example 1).

This composition provides improved conditioning properties, such as oft feel, and improved ease of wet combing over a composition that does not comprise quaternium-18 bentonite (par. 88-89).

The subject-matter of claims 1-6, 9-16, 18 and 19 is therefore not new.

- 1.4 D4 discloses a shampoo for brittle hair (page 1, "product description") comprising (page 2)
- the cationic surfactant cocamidopropylamine Oxide

- the amphoteric/zwitterionic surfactant sodium lauroamphoacetate
- the silicone Silicone Quaternium-16
- the cationic polymer guar hydroxypropyltrimonium chloride
- the fatty alcohol butyloctanol
- and the clay kaolin.

The subject-matter of claims 1-3, 5, 10, 11, 13, 14, 18 and 19 is therefore not new.

2 Objections under Article 33(3) PCT (Inventive step)

The present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claims 1-19 does not involve an inventive step.

- 2.1 The present application relates to the provision of compositions for washing keratin fibers (p. 1, l. 5-7) that are mild and lead to a reduction of hair breakage, in particular to the reduction of breakage that occurs during combing after the shampoo (p. 2, l. 5-13).

As a solution to this problem, independent claim 1 provides a cosmetic composition comprising:

- one or more cationic surfactants,
- one or more amphoteric or zwitterionic surfactants,
- one or more silicones,
- one or more cationic polymers,
- one or more fatty alcohols, and
- one or more clays.

Independent claims 18 and 19 relate to a process for and to a use for washing keratin fibers.

- 2.2 Compositions according to claims 1-16 and their use for washing keratin fibers according to claims 18 and 19 are already known from D1-D4. Those documents also disclose that the compositions confer conditioning to hair, ease of combing and soft feel, which inherently leads to less hair breakage during combing (see items 1.1 - 1.4).

Therefore, the subject-matter of claims 1-16, 18 and 19 cannot be considered as involving an inventive step (Article 33(3) PCT).

- 2.3 For the subject-matter of claim 17, D1-D4 are all suitable as closest prior art since they relate to hair washing compositions conferring a conditioning effect. At present, D2 will be used for the assessment of inventive step.

- 2.4 The subject-matter of claim 17 differs from D2 in that the composition comprises 0,5-10% by weight of clay instead of 0,3% by weight.
- 2.5 No technical effect, that would result from this difference, is disclosed in the description. The problem to be solved can therefore only be regarded as the provision of alternative hair washing compositions with conditioning effect.
- 2.6 The solution proposed in claim 17, being the use of an higher amount of clay, cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons:
D2 itself discloses that clay can be used in an amount of 0,01-5% (par. 74). Moreover, D5 discloses compositions for improving damaged and embrittled hair (col. 1, l. 1-22) comprising silicones and 0,5-15% clays, preferably kaolinite (col. 5, l. 15-19; claim 1).
Therefore, in order to provide alternative conditioning hair washing compositions to the ones of D2, the skilled person would have considered working in the presently claimed weight range.
- 2.7 If the novelty objections could be overcome, documents D6-D7 would also become relevant for the assessment of inventive step since they relate to the treatment or prevention of hair damage:
D6 discloses that quaternised polysiloxanes protect hair against heat damage (par. 194).
D7 discloses compositions for the treatment of damaged hair comprising the cationic surfactant stearyl trimethylammonium chloride, a combination of dimethylpolysiloxane and amodimethicone, and the fatty alcohol cetyl alcohol (table 2). The composition improves softness and gloss of damaged hair (table 2).
D8 discloses that cationic cellulose polymers prevent hair breakage (par. 6, 7, 65).
D9 discloses that combinations of amphoteric surfactants and cationic polysaccharides prevent hair breakage (par. 10-14, 25-31, 112-115).
- Consequently, all components of the presently claimed compositions are individually known from D5-D9 for the prevention or treatment of hair breakage. It is a measure of common practice to combine compounds, known to be effective for the treatment of hair breakage, in order to provide an alternative composition for the same use.

3 **Re Item VII**

Certain defects in the international application

- 3.1 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D2 is not mentioned in the description, nor is this document identified therein.