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Datasheet for the decision of 16 October 2013

Case Number: T 0090/11 - 3.3.07

Application Number: 01953173.0

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Language of the proceedings: EN

Title of invention:
Shampoo compositions

Patent Proprietor:
Unilever PLC
Unilever N.V.

Opponent:
Henkel AG & Co. KGaA

Headword:

Relevant legal provisions:
EPC Art. 56

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Inventive step - main request (no)

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Catchword:

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Case Number: T 0090/11 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 16 October 2013

Appellant: (Patent Proprietor 1)	Unilever PLC Unilever House Blackfriars London Greater London EC4P 4BQ (GB)
Appellant: (Patent Proprietor 2)	Unilever N.V. Weena 455 3013 AL Rotterdam (NL)
Representative:	Newbould, Frazer Anthony Unilever PLC Unilever Patent Group Colworth House Sharnbrook Bedford, Bedfordshire MK44 1LQ (GB)
Respondent: (Opponent)	Henkel AG & Co. KGaA Henkelstrasse 67 40589 Düsseldorf (DE)
Representative:	Henkel AG & Co. KGaA Intellectual Property (FJI) 40191 Düsseldorf (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 7 December 2010 revoking European patent No. 1299071 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman:	J. Riolo
Members:	D. Semino
	D. T. Keeling

Summary of Facts and Submissions

I. The appeal of the patent proprietors (appellants) lies against the decision of the opposition division announced at the oral proceedings on 16 November 2010 to revoke European Patent 1 299 071.

II. A notice of opposition was filed against the granted patent requesting revocation of the patent in its entirety on the grounds of lack of novelty and lack of inventive step, in accordance with Article 100(a) EPC.

III. The decision was based on a set of claims filed on 1 September 2010 as main request. Claim 1 of that request read as follows:

"1. Process for preparing an aqueous shampoo composition comprising, in addition to water:
i) an anionic surfactant;
ii) a cationic surfactant corresponding to the general formula:
$[N(R_5)(R_6)(R_7)(R_8)]^+(X)^-$
in which R_5 is a hydrocarbyl chain having 8 to 14 carbon atoms or a functionalised hydrocarbyl chain with 8 to 14 carbon atoms and containing ether, ester, amido or amino moieties present as substituents or as linkages in the radical chain, and R_6, R_7, and R_8 are independently selected from (a) hydrocarbyl chains of from 1 to 4 carbon atoms, or (b) functionalised hydrocarbyl chains having from 1 to 4 carbon atoms and containing one or more aromatic, ether, ester, amido or amino moieties present as substituents or as linkages in the radical chain, and X is a salt-forming anion such as those selected from halogen, (e.g. chloride, bromide), acetate, citrate, lactate, glycolate,

phosphate nitrate, sulphate, and alkylsulphate radicals, and
iii) emulsified cationic particles of silicone,
in which the emulsified cationic particles of silicone are added to the shampoo composition as a pre-formed emulsion of amino functionalised silicone with nonionic and/or cationic surfactant, or in which the silicone particles, irrespective of their own charge, have been emulsified with a cationic emulsifier prior to their incorporation into the shampoo composition, and further in which, where cationic surfactant derived from a pre-emulsion is present, additional cationic surfactant is also included in the shampoo composition, and
in which the anionic surfactant is selected from sodium lauryl sulphate, sodium lauryl ether sulphate(n)EO, (where n ranges from 1 to 3), ammonium lauryl sulphate and ammonium lauryl ether sulphate (n)EO, (where n ranges from 1 to 3), end mixtures thereof."

IV. In the decision the following documents were cited *inter alia*:

D7: WO-A-98/19656
D8: Annex provided by the proprietors with letter of 1 September 2010 including interfacial tension data

V. As far as relevant to the present decision, the decision under appeal can be summarised as follows:

The subject-matter of claim 1 of the main request was not inventive with respect to document D7 taken as the closest prior art, whose examples IV and V only differed from the process of claim 1 in that behenyl trimethyl ammonium chloride, namely a cationic surfactant with a hydrocarbyl chain length of 22 carbon atoms, was used instead of a cationic surfactant with a

hydrocarbyl chain length of 8 to 14 carbon atoms. As the data available on file including the ones of D8 did not establish a surprising effect for the claimed process, the problem was the provision of an alternative process for preparing an aqueous shampoo. Using cationic surfactants with shorter alkyl chains to solve that problem was obvious in view of the disclosure of D7 itself.

VI. The appellants lodged an appeal against that decision. In the statement setting out the grounds of appeal they confirmed the set of claims filed on 1 September 2010 as their main request.

VII. In the reply to the statement setting out the grounds of appeal the opponent (respondent) maintained the objection of lack of inventive step.

VIII. Oral proceedings were held on 16 October 2013.

IX. The arguments of the appellants can be summarised as follows:

Taking document D7 as the closest prior art and acknowledging the difference with respect to the disclosure therein in the length of the hydrocarbyl chain of the cationic surfactant substituent as in the decision under appeal, the problem solved by the subject-matter of claim 1 was the provision of a process for making a conditioning composition with improved cleansing. The data in D8 in combination with those in the patent showed that the problem was solved. In this respect it was not relevant that the compositions tested in D8 did not contain silicone, as that component did not provide cleansing. Moreover, those compositions showed that by not matching the

chain lengths of the substituents in the anionic and in the cationic surfactants one could not achieve an improved cleansing, as the anionic phase was disrupted. The data provided by the appellant (in the patent and in D8) were the only ones available on file, so that the burden of proof to show that the problem was not solved lay with the respondent. As in D7 there was no pointer to the use of shorter alkyl chains and all the examples therein did not contain cationic surfactant with alkyl chains according to claim 1, an inventive step had to be acknowledged.

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

The opposition division was correct in deciding that the data available on file did not provide a comparison with the examples of the closest prior art document D7. The examples in the patent and those in D8 did not reproduce the examples of D7, nor did they provide a comparison between processes for preparing aqueous shampoos differing in the distinguishing feature. Not only silicone was absent in the compositions of D8, but those compositions did not even contain a cationic surfactant according to claim 1, so that the results of those tests were irrelevant. The case law is clear in that each party bears the burden of proof for the facts it alleges, which meant that the burden of proof that a problem was actually solved lay with the patent proprietors. In the absence of evidence, the problem was therefore simply that of providing an alternative process to the one disclosed in the examples of D7. As D7 itself disclosed alkyl chains with 1 to 22 carbon atoms for the substituents of the cationic surfactant and even mentioned a chain length of 12 carbon atoms,

the selection of a chain length of 8 to 14 carbon atoms was not inventive.

XI. The appellants requested that the decision under appeal be set aside and the patent be maintained with the set of claims filed on 1 September 2010.

XII. The respondent requested that the appeal be dismissed.

Reasons for the Decision

Inventive step

1. *Closest prior art*

1.1 The Board has no reason to diverge from the common position of the parties regarding the choice of document D7 as the closest prior art, the analysis of that document and the identification of the difference between the subject-matter of claim 1 and the disclosure in D7.

1.2 Indeed document D7 discloses in its examples IV and V (page 30, lines 25 to 34 and table on page 31) a process for preparing an aqueous shampoo composition comprising water (page 31, line 18), ammonium lauryl sulphate as anionic surfactant (page 31, line 4), behenyl trimethyl ammonium chloride as cationic surfactant (page 31, line 10) and a silicone emulsion (page 31, lines 5 and 20 to 30) in which the silicone particles have been emulsified with a cationic emulsifier (cetyl trimethyl ammonium chloride, page 31, line 25) prior to their incorporation into the shampoo composition.

1.3 The difference between the process of claim 1 of the main request and the processes of examples IV and V of D7 is therefore that a cationic surfactant with as substituent a hydrocarbyl chain having 8 to 14 carbon atoms is used instead of behenyl trimethyl ammonium chloride, namely a cationic surfactant with a substituent with a hydrocarbyl chain having 22 carbon atoms.

2. *Problem solved*

2.1 The formulation of the solved problem was the disputed issue between the parties. According to the appellants the evidence on file was sufficient to show that the problem indicated in the patent in suit, namely the provision of a process for making a conditioning composition with improved cleansing (see paragraph [0004] of the patent in suit), was actually solved by the claimed process. In the view of the respondent this was not the case and the problem was simply that of providing an alternative process to the ones disclosed in the examples of D7.

2.2 In the patent five compositions are produced and tested (paragraph [0076] and following tests), wherein two are produced according to the process of claim 1 of the main request (examples 1 and 2) and three are comparative (control and comparative examples A and B). As far as the three relevant ingredients of the compositions are concerned (anionic surfactant, cationic surfactant and silicone emulsion) all compositions contain the same anionic surfactant (sodium laureth sulphate), only the examples according to the invention contain a cationic surfactant (lauryl trimethyl ammonium chloride), while the comparative compositions contain none, and three different silicone

emulsions are used (dimethicone emulsion in the control, cationic amodimethicone emulsion in comparative example A and cationic dimethicone emulsion in comparative example B, example 1 and example 2).

2.3 The tests in the patent therefore might be of relevance for analysing possible effects related to the choice of the silicone emulsion or to the presence or absence of a cationic surfactant, but, apart from not reproducing the examples of D7, the tests do not provide any information concerning the relevance of the chain length of the substituent of the cationic surfactant, which is the point at issue in the determination of the problem solved with respect to D7.

2.4 The data in D8 concern the interfacial tension of two formulations, the first one comprising an amphoteric surfactant (cocoamidopropyl betaine) and an anionic surfactant (sodium lauryl ether sulphate) and the second one comprising in addition to the two ingredients of the first formulation a cationic surfactant with a chain length of the substituent of 16 carbon atoms (cetyl trimethyl ammonium chloride). The data show that the interfacial tension increases from 2.055 for the first formulation to 2.23 for the second formulation (no units are given).

2.5 Neither of the compositions is according to the invention or according to D7, as they do not contain silicone, the first one does not contain any cationic surfactant and the second one contains a cationic surfactant which with 16 carbon atoms in the substituent is neither according to the invention (8 to 14 carbon atoms), nor according to D7 (22 carbon atoms). Already on that basis the data in D8 are not

significant for establishing the problem solved with respect to D7.

2.6 On top of that the two formulations by differing only in the presence or absence of a cationic surfactant are of no relevance in establishing an effect related to the choice of the cationic surfactant on the basis of the chain length of the substituent. Indeed, even assuming in favour of the appellants that the presence of the silicone emulsion is of no relevance for the cleansing properties and that the behaviour of a cationic surfactant with a C_{16} substituent is indicative of the behaviour of a cationic surfactant with a C_{22} substituent, a comparison between the behaviour of formulations with cationic surfactants with different chain lengths of the substituents is not available.

2.7 On that basis the Board can only conclude that the evidence on file does not make it possible to determine any effect, advantage or improvement of the claimed process with respect to the processes disclosed in examples IV and V of D7.

2.8 In that respect the Board notes that, following the generally accepted principle that each of the parties to the proceedings bears the burden of proof for the facts it alleges (Case Law of the Boards of Appeal of the EPO, 7th edition 2013, II.G.5.1.1), alleged advantages to which the patent proprietor merely refers without offering sufficient evidence to support the comparison with the closest prior art, cannot be taken into consideration in determining the problem underlying the invention and therefore in assessing inventive step (Case Law, *supra*, I.D.4.2). The burden of proof in the present case lies therefore undoubtedly with the appellant and there are no special

circumstances which could justify a departure from the principles of the established case law and a reversal of the burden of proof.

2.9 In the absence of effects, advantages or improvements of the claimed process with respect to those of the closest prior art, the problem solved by the subject-matter of claim 1 of the main request is the provision of a further process for preparing an aqueous shampoo composition.

3. *Obviousness*

3.1 Document D7 itself in the context of cationic surfactants to be used in the compositions disclosed therein discloses cationic surfactants defined by means of a general chemical formula equivalent to the one indicated in claim 1 of the main request in which the substituents are selected from aliphatic groups of from 1 to 22 carbon atoms (page 10, lines 27 to 35). In addition aliphatic groups with 12 carbon atoms or more are explicitly mentioned (page 11, line 5).

3.2 The skilled person, starting from the processes of examples IV and V of D7 and looking for a further process, would therefore consider it obvious to replace the cationic surfactant present therein with one with a substituent having an alkyl chain of 8 to 14 carbon atoms in view of the disclosure of D7 alone.

3.3 On that basis the subject-matter of claim 1 of the main and sole request does not involve an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Nachtigall J. Riolo

Decision electronically authenticated