

Internal distribution code:

- (A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

**Datasheet for the decision
of 25 September 2019**

Case Number: T 0231/16 - 3.3.06

Application Number: 06801588.2

Publication Number: 1915439

IPC: C11D3/37, C11D1/00

Language of the proceedings: EN

Title of invention:

ACIDIC CLEANING COMPOSITION CONTAINING A HYDROPHILIZING
POLYMER

Applicant:

Colgate-Palmolive Company

Headword:

ACIDIC CLEANING COMPOSITION / Colgate-Palmolive

Relevant legal provisions:

EPC Art. 56

Keyword:

Inventive step (all requests) - obvious solution

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 0231/16 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 25 September 2019

Appellant: Colgate-Palmolive Company
(Applicant) 300 Park Avenue
New York, NY 10022 (US)

Representative: Wichmann, Hendrik
Wuesthoff & Wuesthoff
Patentanwälte PartG mbB
Schweigerstraße 2
81541 München (DE)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 28 August 2015
refusing European patent application No.
06801588.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: P. Ammendola
R. Cramer

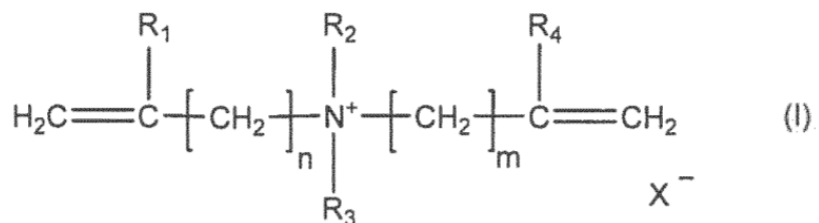
Summary of Facts and Submissions

- I. The appeal is against the decision of the Examining Division refusing European patent application 06 801 588.2 for lack of inventive step of all the then pending claim requests.
- II. According to the decision under appeal the closest prior art was the liquid cleaning compositions disclosed in D4 (US 6,664,218 B1). The Examining Division (compare points 4 and 7 of the reasons of the decision) apparently considered equally representative of this prior art the (sole) Example 1 of D4 and the comparative composition A described on page 7 of the application as an example of this prior art. The Examining Division also referred (see e.g. at point 7) to the combination of D4 with D3 (EP 0 875 551 A1).
- III. With its grounds of appeal dated 15 December 2015 the appellant filed three new sets of amended claims as Main Request and First to Second Auxiliary Requests.
- IV. The appellant was summoned to oral proceedings. This hearing was cancelled following appellant's letter of 19 December 2018 with which it withdrew its request for oral proceedings and requested a decision on the state of the file.
- V. Claim 18 of the **Main Request** reads:

"18. A liquid cleaning composition comprising:

(A) a hydrophilizing polymer, wherein the hydrophilizing polymer is a water soluble or water dispersible copolymer comprising a reaction product of:

(a) at least one monomer having the following structure (I):



wherein

R_1 and R_4 independently represent a hydrogen atom or a linear or branched C_1 - C_6 alkyl group;

R_2 and R_3 independently represent an alkyl, hydroxyalkyl or amino alkyl group in which the alkyl group is a linear or branched C_1 - C_6 chain, preferably a methyl group;

n and m independently represent integers between 1 and 3;

X^- represents a counterion; and

(b) at least one hydrophilic monomer having an acidic function which is copolymerizable with (a) and capable of ionizing in the medium of use; and wherein the molar ratio of monomers (a)/(b) is from 60/40 to 5/95;

(B) a zwitterionic surfactant;

(C) an acid; and

(D) a solvent,

wherein the liquid cleaning composition has a pH below 4."

Claim 16 of the **First Auxiliary Request** only differs from claim 18 of the Main Request in the definition of ingredient "(C)" as:

"(C) citric acid; and".

Claim 10 of the **Second Auxiliary Request** differs from claim 18 of the Main Request in the portion (following the definition of ingredient "(A)") reading:

*" (B) cocoamidopropyl betaine;
(C) citric acid;
(D) propylene glycol n-butyl ether; and
(E) ethanol
wherein the liquid cleaning composition has a pH
below 4."*

VI. The appellant submitted in essence that the technical problem to be solved in view of D4 was the provision of a composition for removing limescale from a surface whilst also preventing formation of limescale/watermarks and preventing soap scum build up. Since D3 did not contain the particular hydrophilising polymer claimed and contained no teaching suggesting that the compositions of D4 could be modified by adding an acid, the skilled person without knowledge of the solution to this technical problem would not consult D3. Hence, only with hindsight the skilled person would look at D3 when starting from D4 and seeking improved limescale removal properties.

Reasons for the Decision

1. *Main request - Inventive step (Article 56 EPC)*
- 1.1 Closest prior art
- 1.1.1 The appellant did not dispute the finding of the Examining Division that D4 disclosed the closest prior art.

- 1.1.2 D4 describes liquid compositions for cleaning hard surfaces and provides only one specific embodiment, namely the one illustrated in Example 1.

However, as explicitly stated in paragraph [0038] of the present application, the composition A described as comparative in the instant application is also an embodiment of the prior art according to D4. Moreover, the chemical formulation of the comparative composition A is very similar to that of Example 1 (compare the table in [0038] of the application with the table of Example 1 in D4).

- 1.1.3 The board notes that the subject-matter of claim 18 at issue, e.g. as embodied by composition B in the instant application - differs substantially from Example 1 of D4 or from the comparative composition A only for the additional presence in the former of citric acid and the consequent pH below 4 (see paragraph [0038] of the application, wherein the table reports a pH of "7.5" for comparative composition A free of any acid, whereas composition B - additionally containing 3.7 % by weight of citric acid - is described to have a pH of "2.1").

- 1.1.4 Hence, the board concludes that each of Example 1 of D4 and the comparative composition A represents a suitable starting point for the assessment of inventive step.

1.2 Technical problem

According to paragraph [0011] of the application the technical problem underlying the alleged invention is the provision of a "*hard surface cleaning composition*" that "*provides enhanced cleaning of acid sensitive stains lime scale and soap scum in order to facilitate subsequent cleaning*".

1.3 The solution

The solution to the above technical problem, as offered in claim 18, is a liquid cleaning composition having a pH below 4 and comprising:

- (A) a specific hydrophilizing polymer;
 - (B) a zwitterionic surfactant;
 - (C) an acid
- and
- (D) a solvent.

1.4 Success of the solution

1.4.1 According to D4, column 1, lines 47 to 49 and 59 to 62, the cleaning compositions of this prior art already remove "calcium deposits on hard surfaces such as limescale or soap scum" and "prevent the build-up of soap scum (e.g. calcium oleate)".

1.4.2 The appellant did not dispute that these prior art compositions achieved satisfactory removal of soap scum and prevention of soap scum (build-up), so it is undisputed that the subject-matter of claim 18 does not succeed in providing a level of removal of soap scum and of prevention of soap scum (build-up) that is "enhanced" vis-à-vis D4. Hence, at least this part of the technical problem mentioned in the application is not successfully solved by the claimed composition.

1.4.3 As to the remaining aspect of the technical problem, namely the "enhanced" removal of limescale, the appellant argued that the experimental comparison between comparative composition A and composition B summarised in the table of paragraph [0038] of instant application demonstrated that the prior art of departure did not remove limescale from hard surfaces

whereas the compositions of the invention do remove limescale (see the grounds of appeal, from the penultimate paragraph on page 2 to the third paragraph on page 3).

- 1.4.4 In the conviction of the board the reported comparison only proves that the comparative composition A provides no perceivable removal of a certain limescale from a certain hard surface, when using it in certain cleaning operations. Accordingly, the experimental comparison reported in paragraph [0038] of the application only renders plausible that the comparative composition A can be appreciably less effective in removing limescale from hard surfaces than the embodiment of the claimed subject-matter represented by composition B.

Accordingly, the board has no reason to doubt that the part of the technical problem relating to the "enhanced" removal of limescale is solved.

- 1.5 The objective technical problem

Thus, the technical problem actually solved lies in the provision of a hard surface cleaning composition that provides an enhanced cleaning of limescale, whilst retaining satisfactory removal of soap scum and its build-up.

- 1.6 Obviousness of the solution

- 1.6.1 The board preliminarily stresses that - as also apparent from the expression in paragraph [0011] of the application "*acid sensitive stains like lime scale and soap scum*" (as well as, for instance, from the passage on page 2, lines 114 to 15, of the section of D3 relating to the background art, which reads: "[i]t is

well-known in the art that limescale deposits can be chemically removed with acidic solutions, and a great variety of acidic cleaning compositions have been described for this purpose") - any skilled formulator of hard surface cleaning compositions that must also be able to dissolve hard water-caused deposits (such as e.g. bathroom or kitchen cleaners) is well aware that limescale (and soap scum) are "acid sensitive stains" and that, for this reason, it is conventional to incorporate certain acids therein.

- 1.6.2 The board stresses that the appellant has not even alleged, not to mention proved, the existence of specific reasons for which the skilled reader of D4 would predict that the addition of an acid or the lowering of pH would be substantially detrimental to the ability of the compositions of D4 to remove soap scum or to prevent its build-up.
- 1.6.3 Hence, the skilled person wishing to enhance the ability of dissolving limescale of the cleaning compositions of D4 would consider it immediately obvious to solve the posed technical problem by adding therein one of those acids already conventionally used in acidic bathroom or kitchen cleaners.
- 1.6.4 The skilled person would therefore look for existing examples of acidic cleaners designed for removing limescale deposits from hard surfaces and, thus, would in particular consider D3, since this document teaches to formulate liquid compositions for removing limescale deposits preferably having a pH of less than 4 due to the presence of substantial amounts of certain acids (see in D3 page 4, lines 20 to 30). The board notes that in particular citric acid is listed among the suitable acids (see page 4, line 26) and then cited

again (at the subsequent lines 44 to 44, also mentioning its "pKa = 3.06") as preferably present in combination with an even stronger acid (i.e. maleic acid; Example XVII in the table on page 16 of D3 provides a specific example of this combination). It is also to be noted that D3 is clearly focused on bathroom and kitchen cleaners and, thus, also on the removal of soap scum (see e.g. page 13 of D3, lines 14 to 18).

1.6.5 Accordingly, a skilled person would consider it obvious to solve the posed technical problem by adding - e.g. to Example 1 of D4 or to the comparative composition A of the application - a substantial amount of any of the suitable acids mentioned in D3, including citric acid, so as to produce a pH (of the cleaning composition) below 4. By such obvious modifications the skilled person arrives at compositions (such as composition B of the application) that comply with all the requirements of claim 18 under consideration.

1.6.6 The appellant's observation that D3 does not teach to add the acid to compositions containing the specific hydrophilising copolymers used in D4 is found irrelevant. In the absence (in D4 or D3 or in the common general knowledge) of any teachings that could justify expecting a negative technical effect in case these hydrophilising copolymers (or any other of the ingredients only present in the compositions of D4 and not in those of D3) were exposed to an acidic environment, the skilled formulator has no reason to exclude the possibility to add in the hard-surface cleaning compositions of D4 (already directed to the removal of calcium deposits and the prevention of their build-up) the same acids that are disclosed in D3 as also apt at favouring the removal of limescale provided

when present in (other) hard-surface cleaning compositions.

1.7 Since the skilled person by combining the disclosure of D4 with D3 arrives at the subject-matter of claim 18 without an inventive step, the Main Request is found not to comply with Article 56 EPC and cannot be allowed.

2. *First Auxiliary Request - inventive step (Article 56 EPC)*

The subject-matter of claim 16 of this request differs from that of claim 18 of the Main Request in that the former is limited to compositions in which the acid is citric acid and thus, for the board, is obvious in view of the combination of D4 with D3 for substantially the same reasons indicated above.

Indeed, one of the modifications of the liquid cleaning compositions of D4 exemplified by Example 1 that D3 renders obvious for achieving enhanced limescale removal is the addition of an amount of citric acid apt at producing a pH below 4.

Since the skilled person by combining the disclosure of D4 with D3 arrives at the subject-matter of claim 16 without an inventive step, this request is found not to comply with Article 56 EPC and cannot be allowed either.

3. *Second Auxiliary Request - inventive step (Article 56 EPC)*

3.1 The subject-matter of claim 10 of this request differs from that of claim 18 of the Main Request in that the

former is limited to compositions comprising in combination a specific zwitterionic surfactant ("*cocoamidopropyl betaine*"), citric acid and a specific solvent system ("*propylene glycol n-butyl ether*" and "*ethanol*").

3.2 From the relevant appellant's submissions (on page 7 of the grounds of appeal) it does not appear disputed that any of the specified "*cocoamidopropyl betaine*", "*propylene glycol n-butyl ether*" and "*ethanol*" are encompassed among the preferred ingredients of the liquid cleaning compositions of D4. The board notes in particular that all these ingredients are simultaneously present in combination in each of the embodiments of this prior art used as starting point (namely, the comparative composition A as well as Example 1: compare the table in [0038] of the application with the table of Example 1 of D4).

3.3 Thus, also the subject-matter of claim 10 under consideration is obvious in view of the combination of D4 with D3 for substantially the same reasons indicated above, since it also results from one of the modifications of the liquid cleaning compositions of D4 that D3 renders obvious for achieving enhanced limescale removal, namely from the addition of citric acid in an amount apt at producing a pH below 4.

Since the skilled person by combining the disclosure of D4 with D3 arrives at the subject-matter of claim 10 without an inventive step, also this request is found not to comply with Article 56 EPC and must be refused.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated