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Datasheet for the decision of 30 November 2007

Case Number: T 1866/06 - 3.3.06

Application Number: 02800082.6

Publication Number: 1430107

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Language of the proceedings: EN

Title of invention:
Toilet bar having a latent acidifier

Applicants:
UNILEVER PLC, et al

Opponent:
-

Headword:
Latent acidifier/UNILEVER

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 83

Keyword:
"Sufficiency of disclosure (no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1866/06 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 30 November 2007

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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 24 May 2006 refusing European application No. 02800082.6 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: P.-P. Bracke
Members: G. Raths
U. Tronser

Summary of Facts and Submissions

I. This appeal is from the decision of the Examining Division to refuse the European patent application No. 02 800 082.6 relating to a toilet bar having a latent acidifier.

II. Claim 6 of the application as filed read:

"6. A toilet bar, comprising:
(a) 30 to 80% by wt. of a fatty acid soap;
(b) 5 to 40% by wt. of a non—soap anionic surfactant; and
(c) a latent acidifier in an effective amount to yield an aqueous slurry delta pH value of more than 0.5."

III. With the letter dated 1 March 2003 the applicant filed a set of 20 claims of which claim 6 read as follows:

"6. A toilet bar, comprising:
(a) 30 to 80% by wt. of a fatty acid soap;
(b) 5 to 40% by wt. of a non—soap anionic surfactant; and
(c) a latent acidifier in an effective amount to yield an aqueous slurry delta pH value of more than 0.5; wherein the latent acidifier is an organic or inorganic material and wherein the aqueous slurry delta pH is the value obtained when the pH of a 10% aqueous slurry of a bar with the latent acidifier is subtracted from the pH of an aqueous slurry of a bar without the latent acidifier."

IV. In its decision the Examining Division found, inter alia, that the application in suit would not meet the requirements of Article 83 EPC, in particular for the reasons

- that only certain organic or inorganic materials may be incorporated into the toilet bar and are such that they do not substantially convert soaps or other alkaline materials, contained within the toilet bar, to the free acid form;

- that the skilled person would have to test an infinite number of organic or inorganic materials to ascertain if they meet specific test requirements, inter alia, the delta pH and the yield stress ratio i.e. the ratio of the yield stress of the bar with the latent acidifier to the yield stress of the bar without the latent acidifier (Rys value), what would represent an undue burden;

- that the term "latent acidifier" would not be clear;

- that the claim would have been drafted in a way which attempts to define the invention by a result to be achieved.

Therefore the invention would not be disclosed in a manner sufficiently clear and complete for it to be carried out by a skilled person.

V. The applicant (hereinafter appellant) filed an appeal against this decision.

The applicant submitted a main request, a first auxiliary request and a second auxiliary request, all annexed to the letter dated 22 September 2006.

Main request

Claim 6 of the main request is identical to claim 6 of the set of claims annexed to the letter dated 1 March 2003.

First auxiliary request

Claim 6 of the first auxiliary request read:

"6. A toilet bar, comprising:
(a) 30 to 80% by wt. of a fatty acid soap;
(b) 5 to 40% by wt. of a non—soap anionic surfactant; and
(c) a latent acidifier in an effective amount to yield an aqueous slurry delta pH value of more than 0.5, wherein the latent acidifier is an organic or inorganic material and wherein the aqueous slurry delta pH is the value obtained when the pH of a 10% aqueous slurry of a bar with the latent acidifier is subtracted from the pH of an aqueous slurry of a bar without the latent acidifier, wherein the latent acidifier when incorporated into a toilet bar either (a) does not substantially convert soaps or other alkaline materials contained in the bar to the free acid form; (b) neutralises harsh soaps or other alkaline materials in the bar; or (c) reduces the pH of the bar through other acid-base interactions whereby the bar's hardness becomes degraded as evidenced by yield stress

measurements; and wherein the latent acidifier does not release gas with a change in pH."

Second auxiliary request

Claim 6 of the second auxiliary request read:

"6. 1. A toilet bar, comprising:
(a) 30 to 80% by wt. of a fatty acid soap;
(b) 5 to 40% by wt. of a non—soap anionic surfactant and
(c) a latent acidifier in an effective amount to yield an aqueous slurry delta pH value of more than 0.5; wherein the latent acidifier is an organic or inorganic material and wherein the aqueous slurry delta pH is the value obtained when the pH of a 10% aqueous slurry of a bar with the latent acidifier is subtracted from the pH of an aqueous slurry of a bar without the latent acidifier, and wherein the latent acidifier is an organic or inorganic material selected from alumnium sulphate, aluminium chloride, ammonium chloride, ammonium phosphate, aluminium chlorohydrate, aluminium-zirconium trichlorohydrate, aluminium-zirconium trichlorohydrate glycine complex, zinc sulphate, calcium acetate, calcium chloride, calcium nitrate, calcium phosphate, calcium sulphate, ferric sulphate, magnesium chloride, and magnesium sulphate."

VI. The appellant argued

- that the amendment of the claim was partially based on a recommendation of the primary examiner suggesting a modification of the claim;

- that the term "latent acidifier" as such is sufficiently clear and, if defined by additional features, also acceptable since it is allowable to define a technical result by functional features if these features provide instructions which are clear for the expert to reduce them to practise;

- that it is not necessary to define the latent acidifiers by indicating concrete examples.

VII. The Board of appeal issued a communication on 1 February 2007 addressing, inter alia, objections under Article 83 EPC.

With letter of 24 September 2007, the appellant refuted all the objections raised by the Board and it also filed a third auxiliary request.

Third auxiliary request:

Claim 6 read as follows:

"1. A toilet bar, comprising:
(a) 30 to 80% by wt. of a fatty acid soap;
(b) 5 to 40% by wt. of a non—soap anionic surfactant; and
(c) a latent acidifier in an effective amount to yield an aqueous slurry delta pH value of more than 0.5;
wherein the latent acidifier is an organic or inorganic material and wherein the aqueous slurry delta pH is the value obtained when the pH of a 10% aqueous slurry of a bar with the latent acidifier is subtracted from the pH of an aqueous slurry of a bar without the latent

acidifier, and wherein the latent acidifier is calcium sulphate."

VIII. The Board of appeal issued a second communication on 8 October 2007, and, inter alia, specified the objections raised under Article 83 EPC, in particular in regard of the selection procedure of the latent acidifiers.

By fax dated 20 November 2007 the Board informed the appellant that the discussion during the oral proceedings scheduled for 30 November 2007 might turn, inter alia, on Article 83 EPC.

In its letter dated 28 November 2007 the appellant requested the withdrawal of the request for oral proceedings and, further, a decision to be made on the requests on file.

IX. Oral proceedings took place on 30 November 2007 in the absence of the appellant.

X. The appellant had requested in writing

- that the decision under appeal be set aside and

- that a patent be granted

on the basis of the claims according to the main request or the auxiliary requests 1 or 2, all three of them filed with the letter dated 22 September 2006,

or, on the basis of the claims according to the auxiliary request 3 filed with the letter dated 24 September 2007.

Reasons for the Decision

Sufficiency of disclosure (Article 83 and 100(b) EPC)

1. Procedural matters

Sufficiency of disclosure within the meaning of Article 83 EPC has to be assessed on the basis of the application as a whole i.e. including the description and claims.

Sufficiency of disclosure presupposes that the skilled person is able to prepare substantially all embodiments falling within the ambit of the claims.

The toilet bar claimed according to the main request or one of the auxiliary requests 1 to 3 comprises (a) a fatty acid soap, (b) a non-soap anionic surfactant and (b) a latent acidifier.

The Board focuses on the question whether the skilled person is able to reproduce the toilet bar claimed according to claim 6 of the main request or one of the auxiliary requests 1 to 3 by using the original application documents without any inventive effort over and above the ordinary skills of a practitioner, in particular whether the skilled person is able to identify suitable latent acidifiers.

The latent acidifier is defined in different terms in the four requests:

Main request

The toilet bar comprises, inter alia,
(c) a latent acidifier in an effective amount to yield an aqueous slurry delta pH value of more than 0.5;
wherein the latent acidifier is an organic or inorganic material and wherein the aqueous slurry delta pH is the value obtained when the pH of a 10% aqueous slurry of a bar with the latent acidifier is subtracted from the pH of an aqueous slurry of a bar without the latent acidifier.

First auxiliary request

The toilet bar comprises, inter alia, a latent acidifier as defined in Claim 6 of the main request and which when incorporated into said bar either (a) does not substantially convert soaps or other alkaline materials contained in the bar to the free acid form;
(b) neutralises harsh soaps or other alkaline materials in the bar; or
(c) reduces the pH of the bar through other acid-base interactions whereby the bar's hardness becomes degraded as evidenced by yield stress measurements; and wherein the latent acidifier does not release gas with a change in pH.

Second auxiliary request

The toilet bar comprises, inter alia, a latent acidifier as defined in Claim 6 of the main request and wherein the latent acidifier is an organic or inorganic material selected from aluminium sulphate, aluminium chloride, ammonium chloride, ammonium

phosphate, aluminium chlorohydrtae, aluminium-zirconium trichlorohydrate, aluminium-zirconium trichlorohydrate gylcine complex, zinc sulphate, calcium acetate, calcium chloride, calcium nitrate, calcium phosphate, calcium sulphate, ferric sulphate, magnesium chloride, and magnesium sulphate.

Third auxiliary request

The toilet bar comprises, inter alia, calcium sulphate.

Latent acidifiers are classified in the application as filed in "inventive latent acidifiers" and "comparative latent acidifiers" (see example 1 and Table 1).

Since, in essence, claim 6 of the main request and of the three auxiliary requests have in common the presence of component (c), i.e. the latent acidifier, such as calcium sulphate, and since, even for calcium sulphate as latent acidifier, the Board comes to the conclusion that the requirement of Article 83 EPC is not met, all four requests can be dealt with together.

2. For the Board, the term "latent acidifier" is not usual in the art and as such not clear.

The appellant argued that the skilled person would understand by "latent acidifier" a compound which has the inherent property of reducing the pH value.

The Board does not agree. For the Board, this explanation of the term "latent acidifier" is not sufficient as it is only a circumscription of the terms but does not in itself specify a specific chemical compound. Also, no evidence confirming the appellant's

allegation that the term would be usual in the art had been filed.

The application as filed discloses, on the one hand, several characteristics of the latent acidifier and, on the other hand, a method in which the latent acidifier is taken for determining a critical value, the delta pH, which should help to select the suitable latent acidifier.

(1) The characteristics of the latent acidifier according to the application as filed

Latent acidifiers are limited to organic or inorganic materials that when incorporated into a toilet bar

(a) do not substantially convert soaps or other alkaline materials contained in the bar to the free acid form;

(b) do not degrade the bar's hardness as evidenced by yield stress measurements, the yield stress Rys being defined as the ratio of the yield stress of a bar with latent acidifier to the yield stress of a bar without latent acidifier;

(c) neutralize harsh soaps or other alkaline materials contained in the toilet bar;

(d) reduce the pH of the bar through other acid-base interactions so as to create a mild cleansing action for the skin without substantially degrading the bar's hardness;

(e) latent acidifiers are further limited to compounds that do not release gas with a change in pH (application as filed, page 2, line 18 to page 3, line 9).

2.1 The crucial question is whether the skilled person is able to select a latent acidifier on the basis of the above characteristics (a) to (e).

Characteristic (a) referring to the ability to not *substantially convert* soap in free acid does not disclose the degree of conversion in free acid and, hence, this characteristic is not sufficiently specific to allow a skilled person to choose a suitable latent acidifier.

As to characteristic (b), in example 2 of the application as filed it is said that the hardness of the inventive bar changes *very little*. The Rys values, defined under point IV, paragraph 3, are 1.13 (comparative example 1) vs. 1.22 (inventive example 1) and 0.57 (comparative example 2) vs. 0.62 (inventive example 2).

Even if the skilled person can determine the Rys values for a certain compound he assumes appropriate, the Rys values are of no classification help since the application does not define a selection criterion based on the Rys value which would distinguish suitable from non suitable latent acidifiers.

Characteristic (c) does not define the term "harsh" soaps.

Characteristic (d) does not define "other acid-base interactions".

Characteristic (e) refers to an exclusion of compounds i.e. "carbonates, bicarbonates and sulfites" but does not refer to a positive list of compounds to be used.

Thus, the Board concludes that the characteristics (a) to (e) are not sufficiently specific to allow a skilled person to identify a suitable latent acidifier.

(2) Examples of latent acidifiers

It is true that the application as filed enumerates compounds which the skilled person can try as suitable latent acidifiers such as aluminum sulphate, aluminum chloride, ammonium chloride, ammonium phosphate, aluminum chlorohydrtae, aluminum-zirconium trichlorohydrate, aluminum-zirconium trichlorohydrate gylcine complex, zinc sulphate, calcium acetate, calcium chloride, calcium nitrate, calcium phosphate, calcium sulphate, ferric sulphate, magnesium chloride, and magnesium sulphate.

However, as shown herein below, the use of one of these latent acidifiers does not necessarily lead to the desired success. The identification method offered in the application raises insurmountable hurdles.

The application as filed discloses a procedure for measuring the delta pH value. However the conclusions are misleading, as shown hereinbelow:

(3) The method for measuring the aqueous slurry pH

Nine grams of the base formula and one gram of the latent acidifier (or a comparative compound) were blended with 90 g of water to create a 10% slurry. The pH of the slurry is then measured at 25°C. (page 30, lines 5 to 11) .

This method of determining a first pH discloses the amount of latent acidifier, i.e. 1 g, for measuring the pH of the slurry.

A second pH measurement of the slurry takes place in absence of the latent acidifier.

The difference between the two pH values, i.e. the delta pH, should be greater than 0.5.

(4) The delta pH value as a selection criterion

The Board does not contest that the skilled person would be able to determine the above mentioned pH measurements. The objection of the Board concerns the conclusions to be drawn from the delta pH value i.e. the differences in pH values of the aqueous slurries with and without the latent acidifier.

Based on the tables 1 and 2 of the application as filed (pages 25 and 26) the Board drew up in its communication dated 8 October 2007 the following table A, which was not disputed.

TABLE A	delta pH value with respect to control			
	base 1	Base 2	base 3	
ammonium chloride		0,4		I
ammonium acetate	0,2			I
ammonium sulfate	0,3	0,2		I
calcium acetate			0,3	I
calcium hydroxide	4,9	3,0	0,5	**C**
calcium nitrate			0,3	I
calcium sulfate		0,3	0,2	I
magnesium chloride			0,4	I
magnesium sulfate			0,2	I

The essential components of the bases 1, 2 and 3 are as follows:

TABLE B			
Component	base 1 (parts by weight)	base 2 (parts by weight)	base 3 (parts by weight)
soap (blend composition)	10 (3 stearic, 1.3 coco, 5.7 tallow)	55 (20 coco,35 tallow)	82 (15 coco, 67 tallow)
sodium cocyl isethionate	50	20	10

The Board observes

- that the delta pH value is a function of component (a) i.e. the fatty acid soap, and of component (c) i.e. the latent acidifier;
- that there are latent acidifiers which are labeled "I" (invention) in spite of having a delta pH value lower than the required 0.5, for instance ammonium chloride;
- that there are latent acidifiers which are labeled "C" (comparative) in spite of having a delta pH value

greater than 0.5, for instance calcium hydroxide has a delta pH of 4.9 with respect to base 1.

It further results from table 1 of the application as filed that, when added to base 2, the latent acidifier sodium sulfate (classified "comparative") leads to a delta pH value of 0.3 and the latent acidifier calcium sulfate (classified "inventive") to a delta pH value of 0.2. In both cases the delta pH value is lower than 0.5. In spite of not meeting the requirement of a delta pH value greater than 0.5, calcium sulfate is however classified "invention" latent acidifier. In the light of the requirement regarding a delta pH value of greater than 0.5, this classification is contradictory.

On the basis of the above contradictions the skilled person is not in a position to qualify sodium sulfate as a non suitable latent acidifier and to qualify calcium sulfate as a suitable one.

Consequently, the results, instead of corroborating the selection mode of the adequate latent acidifier, leave the skilled person with an incomprehensible classification.

(5) An "effective amount"

Also, the term "effective amount" is not clear.

A distinction has to be made between two different amounts: the amount for the "delta pH" test and the amount to be used in the toilet bar.

(i) The amount of latent acidifier for determining the delta pH is (according to the method for measuring the aqueous slurry pH [application as filed, page 30, lines 5 to 11]) set at 1 g.

(ii) Consequently, by the term "effective amount" another amount must be meant. This amount depends on the type of soap (component (a)) and the type of latent acidifier (component (c)). Evidence heretofore is given by Table 2 of the application as filed, of which the relevant part is reproduced in Table B of the present decision.

So, according to Table 2, a soap comprising 10 parts by weight of a blend composition of "3 stearic, 1.3 coco and 5.7 tallow" yields with calcium sulfate as a latent acidifier a delta pH value which meets the requirement of greater than 0.5, namely 2.1.

However, two other soaps, both covered by claim 6 of all the requests, namely, a soap comprising 55 parts of by weight of a blend composition of "20 coco and 35 tallow" and a soap comprising 82 parts by weight of a blend composition of "15 coco and 67 tallow" yield with **calcium sulfate** a delta pH not meeting the requirement of being greater than 0.5, namely 0.3 and 0.2, respectively.

It follows that a skilled person, even when taking a latent acidifier classified as a suitable candidate according to the present invention, would have to adapt the blend composition of the soap. To this end, the skilled person has only the option to modify the composition of component (a) of claim 1, i.e. the soap

in a specific manner so as to obtain the required delta pH. However, there is no guidance in the application as filed how he can achieve this. No measures are indicated the skilled person should take if the delta pH value of the aqueous slurry is not obtained.

Since the skilled person can only establish by trial and error whether or not his particular choice of latent acidifier in a specific amount will provide a satisfactory result, this amounts to an undue burden.

3. The board concludes that all the requests suffer from the fatal defect of not sufficiently defining which latent acidifier may be used in combination with which fatty acid soap (and non-soap anionic surfactant) to yield an aqueous slurry delta pH value of more than 0.5.

4. For these reasons, the Board comes to the conclusion that the patent in suit does not comply with the requirements of Article 83 EPC and, therefore, in accordance with Articles 100(b) and 102(1) EPC, none of the requests of the Appellant is successful.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Rauh P.-P. Bracke