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**D E C I S I O N**  
**of 19 December 2002**

**Case Number:** T 0155/99 - 3.3.6

**Application Number:** 91918216.2

**Publication Number:** 0550644

**IPC:** C11D 1/65

**Language of the proceedings:** EN

**Title of invention:**

Detergent compositions containing polyhydroxy fatty acid amine and alkyl alkoxyated sulfate

**Patentee:**

THE PROCTER & GAMBLE COMPANY

**Opponent:**

Cognis Deutschland GmbH & Co. KG.

**Headword:**

Polyhydroxy fatty acid amide/PROCTER & GAMBLE

**Relevant legal provisions:**

EPC Art. 54(1), 56

**Keyword:**

"Main request: novelty (no) - reproduction of prior art example accurate"

"First and second auxiliary requests: novelty (yes) - incorporation of additives into claim 1; inventive step (no) - additives usual in the art"

**Decisions cited:**

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**Catchword:**

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**Case Number:** T 0155/99 - 3.3.6

**D E C I S I O N**  
**of the Technical Board of Appeal 3.3.6**  
**of 19 December 2002**

**Appellant:** THE PROCTER & GAMBLE COMPANY  
(Proprietor of the patent) One Procter & Gamble Plaza  
Cincinnati,  
Ohio 45202 (US)

**Representative:** Engisch, Gautier  
NV Procter & Gamble Services Company SA  
100 Temselaan  
B-1853 Strombeek-Bever (BE)

**Respondent:** Cognis Deutschland GmbH & Co. KG  
(Opponent) Postfach 130164  
D-40551 Düsseldorf (DE)

**Representative:** -

**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 16 December 1998  
revoking European patent No. 0 550 644 pursuant  
to Article 102(1) EPC.

**Composition of the Board:**

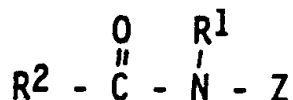
**Chairman:** P. Krasa  
**Members:** G. N. C. Rathes  
C. Holtz

### Summary of Facts and Submissions

I. This appeal is from the Opposition Division's decision to revoke European patent No. 0 550 644.

Claim 1 of the patent as granted was identical to claim 1 of the main request before the Opposition Division and read:

"1. A detergent composition comprising at least 1% by weight, of an alkyl alkoxyated sulfate surfactant and optional auxiliary surfactants and adjuncts, wherein the improvement comprises incorporating into said detergent at least 1 % by weight, of a polyhydroxy fatty acid amide surfactant of the formula:



wherein R<sup>1</sup> is H, C<sub>1</sub>-C<sub>4</sub> hydrocarbyl, 2-hydroxyethyl, or 2-hydroxypropyl, R<sup>2</sup> is C<sub>7</sub>-C<sub>31</sub> hydrocarbyl, and Z is polyhydroxy-hydrocarbyl having a linear hydrocarbyl chain with at least 3 hydroxyls directly connected to said chain, or alkoxyated derivatives thereof; said composition being characterized in that said polyhydroxy fatty acid amide comprises less than 4% by weight of cyclic amide by-product, it optionally comprises a suds suppressing amount of a suds suppressor and is further characterized in that it has a polyhydroxy fatty acid amide:alkyl alkoxyated sulfate weight ratio of from 1:10 to 10:1, preferably 1:1 to 1:4."

Dependent claims 2 to 14 of the patent as granted were identical to claims 2 to 14 of the main request before the Opposition Division.

II. An opposition based on lack of sufficiency of disclosure, of novelty and inventive step was filed (Articles 100(a), 54, 56 EPC). The notice of opposition cited, *inter alia*, the following document:

(1) EP-A-0 285 768.

III. In its decision the Opposition Division held that the subject-matter of claim 1 of the main request lacked novelty (Article 54 EPC) and that claim 1 of the then pending auxiliary request lacked an inventive step (Article 56 EPC).

IV. The proprietor (appellant) filed an appeal against this decision.

Its main request, as defined in the Grounds of Appeal of 22 April 1999, was to maintain the patent on the basis of the claims 1 to 14 as granted.

Its two eventual auxiliary requests were as follows:

1. First auxiliary request as filed under the cover of the letter of 12 December 2002 and comprising 14 claims:

Claim 1 differed from claim 1 of the main request in that the passage "it optionally comprises a suds suppressing amount of a suds suppressor" was deleted and the passage "and it includes at least one additive selected from a suds suppressing amount of a suds suppressor, builders, enzymes, bleaching compounds, polymeric soil release agents, clay soil removal/antiredeposition agents and brighteners" was added at the end of claim 1.

Dependent claims 2 to 14 were identical to claims 2 to 14 as granted.

2. Second auxiliary request comprising 12 claims as submitted during oral proceedings which took place before the Board on 19 December 2002.

Claim 1 differed from claim 1 of the main request in that the words "Use in" were placed in front of "A detergent composition", the passage "wherein the improvement comprises incorporating into said detergent" was replaced by "of", the passage "thereof, said composition being" was replaced by "thereof for improved grease and oil cleaning performance of the composition versus the composition comprising the alkyl alkoxyated surfactant, said composition being".

Dependent claims 2 to 12 are also use claims and correspond otherwise, apart from editorial adaptations, to the respective claims of the main request.

- V. The appellant's arguments, in writing and at the oral proceedings, were in summary as follows:

- (a) The reproduction of the example with N-methyl-coconutglucamide according to the recipe of document (1)(page 3, line 40), labelled "experiment V1" in Table 1 of the opponent's (here the respondent's) letter dated 28 August 1998, was made with an amount of methyl ester different from the amount disclosed in document (1). Further, not all the parameters quoted in document (1) were indicated by the opponent. The relevant purity level (ie a low level of by-products, including

cyclic amide by-product) of the product obtained was not unambiguously proved. Therefore this evidence was insufficient for demonstrating that document (1) was novelty destroying.

- (b) Figure 1 of document (1) did not show the influence by N-methyl-cocoglucamide on viscosity of a detergent composition but only of an ether/sulfate-paraffinsulfonate system.
- (c) The comparison between detergent compositions according to the patent in suit containing alkyl alkoxy sulfate and a laboratory mixture containing N-methyl-cocoglucamide according to document (1) failed because a laboratory mixture to be used for viscosity measurements was not comparable to a commercial detergent composition. Pursuant to Article 69 EPC, the extent of protection determined by the terms of claim 1 directed to a detergent composition did not extend to such laboratory mixtures. The conclusions drawn by the respondent on the basis of a laboratory mixture should be discarded.

VI. The respondent, not represented during oral proceedings as indicated in its letter dated 15 November 2002, refuted the arguments of the appellant made in writing.

VII. The appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of either the patent as granted (main request) or in accordance with the claims 1 to 12 as the first auxiliary request filed under cover of the letter of 12 December 2002, or claims 1 to 12 filed as the second auxiliary request in the oral proceedings on

19 December 2002.

The respondent requested in writing that the appeal be dismissed.

VIII. At the end of the oral proceedings the Chairman announced the decision of the Board.

### **Reasons for the Decision**

#### 1. *Main request*

##### 1.1 Novelty

Claim 1 concerns a detergent composition comprising an alkyl alkoxyated sulfate surfactant and a polyhydroxy fatty acid amide surfactant; said polyhydroxy fatty acid amide comprises less than 4% by weight of cyclic amide by-product.

The respondent's reproduction of the example with N-methyl-coconutglucamide according to the recipe of document (1) (page 4)(respondent's letter dated 28 August 1998, page 2, table 1) showed a cyclic amid content of below 4% and a biodegradability of 100,5% (example 1 having been set at 100% standard).

The appellant objected that the reproduction of said example was not accurate. Document (1) disclosed 669g of a methyl ester of coconut fatty acid but 689g were used instead by the respondent according to its report. Therefore the respondent did not properly rework this example of document (1), so the appellant argued, and no conclusions should be drawn from this experiment.



The Board cannot accept this argument.

- (a) In order to avoid any misunderstanding regarding the amounts to be used, document (1) indicated not only the amounts of ester used in "g" but also in "mol". Thus there were no doubts in regard of the amounts to be used while keeping in mind the difficulty of indicating the molecular weight of a component such as the methyl ester of coconut fatty acid which has a variable  $n$  (eg 6 to 16) for the  $-(CH_2)_n$ -groups in the formula of the coconut fatty acids. When reworking the prior art examples and the invention examples, the respondent fulfilled the requirement of document (1) by using 3 mol ester and 3 mol N-methyl-coconutglucamine (NMG) and of the patent in suit by using 1 mol ester and 1 mol NMG.

For the Board, what matters is the amount in "mol" to be used and not the indication in "g". The objection by the appellant that there was a difference in weight between the indication in document (1) and the reproduction of the example is irrelevant.

- (b) If any difference had an influence on the result, the burden of proof is on the appellant to show its relevance. In absence of such a proof the respondent's reproduction has not been convincingly invalidated.
- (c) The omission of other parameters not relevant for the reproduction, since not part of claim 1 of the patent in suit, does not deprive the respondent's proof from its relevance with respect to its

presentation of the case. By the way, the appellant had not pointed to other features of claim 1 susceptible to invalidate the respondent's proof.

- (d) For all these reasons, the Board accepts the test results submitted by the respondent as evidence which proved that document (1) described a fatty acid glucamide complying with the definition of the polyhydroxy fatty acid amide according to the formula in claim 1. According to document (1) said glucamide is used as a surfactant in alkyl alkoxyated sulfate containing detergent compositions (page 2, line 1 and page 4, lines 27 to 46).

It follows that the subject-matter of claim 1 lacks novelty. Consequently, claim 1 does not meet the requirements of Article 54(1) EPC, and, therefore, the main request is not allowable.

2. *First auxiliary request*

- 2.1 Claim 1 differs from claim 1 of the main request in that the passage "it optionally comprises a suds suppressing amount of a suds suppressor" was deleted and the passage "and it includes at least one additive selected from a suds suppressing amount of a suds suppressor, builders, enzymes, bleaching compounds, polymeric soil release agents, clay soil removal/antiredeposition agents and brighteners" was added at the end of claim 1.

2.2 Articles 84 and 123(2) EPC

The Board is satisfied that claim 1 meets the requirements of Articles 84 and 123 EPC. Since no objections were raised in regard of these articles, no further reasons need be given.

2.3 Novelty

The Board is satisfied that the subject-matter of claim 1 meets the requirements of Article 54(1) EPC. Since no objections were raised in regard of this article, no further reasons need be given.

2.4 Inventive step

2.4.1 The goal of the patent in suit was to provide deterative surfactant systems having excellent grease and oil cleaning performance across a range of water temperatures and wash concentrations which can be manufactured from natural, renewable, non-petrochemical feed stocks, are degradable and exhibit low toxicity to aquatic life (page 2, lines 27 to 28; page 6, lines 1 to 2). The detergent compositions obtained by preferred processes contain low levels of by-products, including a cyclic polyhydroxy fatty acid amide by-product (see page 6, lines 8 to 9).

In view of the examples of the patent in suit the Board is satisfied that this goal is achieved with a detergent composition according to claim 1 comprising essentially an alkyl alkoxyated sulfate surfactant and a polyhydroxy fatty acid amide surfactant with the defined low levels of by-product.

- 2.4.2 Surface active compositions having alkyl alkoxyated sulfate surfactant and a polyhydroxy fatty acid amide surfactant were known from document (1) which disclosed a composition containing fatty alcohol ether sulfate and N-methylcoconut fatty acid glucamide (page 4, line 15 to 57, and page 5).
- 2.4.3 The appellant argued that the objective of document (1) was to increase the viscosity whereas the patent in suit relied on an improved grease and oil performance and on environmental advantages. It concluded that document (1) dealt with a different technical problem than the patent in suit and was too far remote from the patent in suit and that, therefore, document (1) was not the proper starting point for evaluating inventive step.
- 2.4.4 The Board does not agree. Document (1) concerns detergents, dish washing detergents and mild action detergents (page 2, lines 1 to 4). The objective to use a detergent is to remove any stains, also the grease and the oil stains. This is the very purpose of using detergent compositions, even if it is not spelled out explicitly. Therefore, the Board takes document (1) as the starting point for evaluating inventive step.
- 2.4.5 No effects due to the incorporation of one of the additives defined in claim 1 having been demonstrated by the respondent, the Board concludes that these additives are ingredients usual in the art.

In the light of this consideration and of document (1) the problem underlying the patent in suit was to find an alternative detergent composition.

2.4.6 The detergent composition according to claim 1 solved the above mentioned problem. This is corroborated by the attachments 1, 2 and 3 of the document bearing the reference Case 4255CRC, entitled "AFFIDAVIT UNDER RULE 132", signed on 3 August 1993 by Bruce Prentiss Murch (filed under cover of the letter dated 12 October 1994 by the appellant), which displayed, *inter alia*, the cleaning performance on fabrics soiled with bacon grease.

2.4.7 The question remains to be decided whether the detergent compositions according to claim 1 involve an inventive step.

2.4.8 The claimed detergent composition differs from the composition according to document (1) only in that it contains a suds suppressor, builders, enzymes, bleaching compounds, polymeric soil release agents, clay soil removal/antiredeposition agents and brighteners. The additional components are usual in the art and do not result in any surprising effect as already indicated (point 2.4.5). The addition of these conventional additives to the surfactant mixtures otherwise known from document (1) cannot contribute to an inventive step. It follows that the subject-matter of claim 1 does not involve an inventive step, and, therefore, claim 1 does not meet the requirements of Article 56 EPC.

Consequently, the first auxiliary request is not allowable.

### 3. *Second auxiliary request*

3.1 Claim 1 was directed to the use of a detergent

composition comprising an amide and an alkyl alkoxyated sulfate surfactant.

### 3.2 Articles 84 and 123(2) EPC

Apart from the omission of the term "sulfate" between "alkoxyated" and "surfactant", the Board has no other objections under Article 84 EPC. As this deficiency could have easily been removed under Rule 88 EPC, the Board treats claim 1 as if the requirements of Article 84 EPC were satisfied.

Under this assumption, the Board is satisfied that claim 1 meets the requirements of Article 123(2) EPC.

No further arguments need be given since the request fails for other reasons.

### 3.3 Novelty

The Board is also satisfied that the subject-matter of claim 1 is novel since the use of such a detergent composition for improved grease and oil cleaning performance of the composition versus the composition comprising the alkyl alkoxyated sulfate surfactant was not explicitly disclosed by document (1).

### 3.4 Inventive step

The reasons under points 2.4.1 to 2.4.8 apply *mutatis mutandis* to claim 1 of the second auxiliary request.

Thus, the subject-matter of claim 1 does not involve an inventive step and, therefore, claim 1 does not meet the requirements of Article 56 EPC.

It follows that the second auxiliary request is not allowable either.

**Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

P. Krasa