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D E C I S I O N
of 31 May 2006

Case Number: T 1429/04 - 3.3.06

Application Number: 96938139.1

Publication Number: 0874887

IPC: C11D 3/00

Language of the proceedings: EN

Title of invention:

Improvements relating to antimicrobial cleaning compositions

Patentee:

UNILEVER PLC, et al

Opponent:

The Procter & Gamble Company

Headword:

Biocidal activity/UNILEVER

Relevant legal provisions:

EPC Art. 56

Keyword:

"Inventive step (no) - no synergistic effect, obvious alternative"

Decisions cited:

-

Catchword:

-



Case Number: T 1429/04 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 31 May 2006

Appellant: The Procter & Gamble Company
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 5 November 2004
rejecting the opposition filed against European
patent No. 0874887 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: P. Krasa
Members: G. Raths
A. Pignatelli

Summary of Facts and Submissions

- I. This appeal is from the decision of the Opposition Division to reject the opposition against the European patent No. 0 874 887 directed to improvements relating to antimicrobial cleaning compositions.
- II. Claim 1 of the patent as granted read:
- "1. The use of 1-30%wt of a C₁-C₅ linear or branched alcohol as a biocidal activity improving additive in a cleaning composition of pH>8 which comprises 0.01-30%wt on product of an ethoxylated nonionic surfactant other than an alkyl phenol derivative, said ethoxylated nonionic surfactant having a HLB value of 10-14."
- III. In its notice of opposition the opponent sought revocation of the patent on the grounds of Article 100(a) EPC, in particular for lack of novelty and inventive step of the claimed subject-matter.
- IV. In its decision the Opposition Division found that the claimed subject-matter complied with the requirements of the EPC.
- V. An appeal was filed against this decision by the opponent (hereinafter appellant). In the annex to the grounds of appeal, it submitted, inter alia, document (12) EP-A-0 525 276.

The appellant argued that

- Claim 1 would not be directed to a synergistic effect which had to be obtained by the combined use of the nonionic surfactant and the alcohol;

- document (12) described antiseptic preparations containing non-ionic detergents which were alkylene oxide condensates, and thus, anticipated the ethoxylated nonionic surfactant according to Claim 1 of the patent in suit;

- the ethoxylated nonionic surfactants mentioned in document (12), of which the HLB value was not expressly disclosed, had a HLB value in the range of 10 to 14 and also an enhanced bactericidal activity;

- the compositions according to document (12) had a pH of up to 9.5;

- aliphatic alcohols such as ethanol, n-propanol and isopropanol were used in amounts of from 8 to 30% by weight (document (12), page 4, lines 37 to 38); and

- therefore, the subject-matter of Claim 1 lacked novelty.

The Appellant further argued that the claimed subject-matter did not involve an inventive step because document (12) taught that alcohol was a disinfecting agent.

In the annex to the grounds of appeal, the appellant submitted also an experimental report showing that the

effect due to the combined use of an alcohol and of ethoxylated alcohol surfactants was only additive but not synergistic.

VI. The patent proprietor (respondent) replied that it had no other arguments than those set out in its reply dated 23 July 2001 to the notice of opposition.

VII. Oral proceedings were scheduled for 20 April 2004.

By letter dated 10 March 2006 the respondent informed the Board that it would not attend oral proceedings and requested the Board to take a decision based on the file.

By letter dated 20 March 2006 the appellant maintained the request for oral proceedings unless the Board would intend to take the decision to allow the appeal and to revoke the patent in suit.

By letter dated 13 April 2006 the parties were informed that the oral proceedings had been cancelled.

VIII. The appellant requests that the decision under appeal be set aside and that the patent be revoked.

The respondent requests that the appeal be dismissed.

Reasons for the decision

1. *Novelty*

The Board is satisfied that the subject-matter of claim 1 is novel and, therefore fulfils the requirements of Article 54(1), (2) EPC.

Since the patent is revoked for other reasons, no further arguments have to be given.

2. *Inventive step*

2.1 The invention concerns improvements relating to antimicrobial cleaning compositions.

According to the patent in suit, the objective was to provide antimicrobial, preferably disinfecting, compositions which do not require the presence of either expensive or reactive hygiene agents such as hypochlorite or peroxides, but which show a wide spectrum antibacterial effect and are formulated with relatively simple and available materials such as solvents (page 3, lines 16 to 18).

For achieving this, the patent in suit suggests and claims the use of 1-30% by weight of a C₁-C₅ linear or branched alcohol as a biocidal activity "improving" additive in a cleaning composition of pH>8.

2.2 Document (12) concerns also disinfecting and cleaning compositions, in particular the use of alkyl glycosides admixed with bactericidal alcohols in order to

potentiate the anti-microbial effect of treating solutions (page 2, lines 46 to 48).

Since document (12) deals with disinfecting properties of cleaning compositions, in particular with increasing their antimicrobial effects, the Board takes it as a starting point for evaluating inventive step.

- 2.3 For defining the technical problem to be solved by the claimed subject-matter, it has to be established which effects were achieved by the latter. The term "improving" in Claim 1 of the patent in suit presupposes that an improvement is achieved over a reference. However, this reference is missing in Claim 1.

As to the presence of such a reference in the description of the patent in suit, table 1 shows that 8% w/v of propan-2-ol and 0.7% w/v of Dobanol 91-8 (an ethoxylated nonionic surfactant) at pH of 10.5 had a biocidal effect which was not merely additive but supra-additive and for that reason called by the respondent synergistic.

Tables 2a and 2b of the patent in suit show that the use of isopropyl alcohol and an ethoxylated nonionic surfactant, at pH 11, led to a higher but not a synergistic biocidal effect.

The appellant's data submitted with the grounds of appeal showed the antimicrobial effect of Neodol 91-8 (the ethoxylated nonionic surfactant) at four different concentrations, the antimicrobial effect of isopropanol at four different concentrations, and the antimicrobial

effect of a combined use of these two components; the test report showed in a systematic way that the antimicrobial effects were additive, and not synergistic.

Moreover, the appellant had also repeated the examples of table 1 of the patent in suit and found that the effect of using Dobanol 91-8 in combination with propan-2-ol was not synergistic, but, at best, additive; these results thus contradicted those disclosed in table 1 of the patent in suit.

The respondent did not contest the appellant's data and did not submit any counter-evidence.

The evidence submitted by the appellant shadows doubts on the results presented in the patent in suit. In this situation the Board concludes that a supra-additive biocidal activity was not convincingly demonstrated for the claimed use.

2.4 Therefore, the problem underlying the patent in suit in the light of document (12) was to find an alternative solution, in other words, to find a further use of a C₁-C₅ linear or branched alcohol acting as an additive having biocidal activity.

2.5 The examples in tables 1, 2a and 2b of the patent in suit showed the use of propan-2-ol with Dobanol 91-8, and the use of iso-propyl alcohol with Imbetin 91-35, Dobanol 91-5 and Dobanol 91-8, the latter three being ethoxylated non-ionic surfactants.

So, the further use of a C₁-C₅ linear or branched alcohol acting as an additive having biocidal activity is exemplified in the patent in suit and, therefore, the technical problem as defined under point 2.4 is credibly solved.

- 2.6 It remains to be decided whether the solution to this technical problem involves an inventive step, in other words, whether there was prior art giving the skilled person a pointer to use alcohol in combination with an ethoxylated nonionic surfactant having a HLB of 10 to 14 at pH>8.
- 2.7 Document (12) discloses that the antimicrobial effect of alcohols was already known for a long time (page 2, line 17) and that C₁ to C₆ linear or branched alcohols are preferred, such as ethanol, n-propanol and isopropanol (page 3, lines 8 to 10 in combination with line 16). These alcohols should be used in amounts of 8 to 30 wt.-% (page 4, lines 37 to 38), i.e. in amounts falling within the range of 1 to 30 wt.-% as defined in Claim 1 of the patent in suit.

Since the antibiocide activity of C₁-C₅ linear or branched alcohols was known to the skilled person, it remains to be investigated whether or not other features of Claim 1 of the patent in suit could contribute to an inventive step. Other features are the pH, nonionic detergent agents, their concentration and the HLB value.

As to the pH, according to document (12), the disinfecting and cleaning compositions having bactericidal effect should have normally a pH of 4,5 to

9,5 (page 5, lines 32 to 35), i.e. the pH of these compositions may have a pH > 8 as required by Claim 1 of the patent in suit.

The cleaning compositions according to the patent in suit may contain "compounds produced by the condensation of ethylene oxide groups, which are hydrophilic in nature, with an organic hydrophobic compound" (page 3, lines 53 to 54). Such compounds were already known from document (12) which discloses as nonionic detergent agents such compounds which are condensation products of alkyleneoxide with organic hydrophobic compounds, which may have an aliphatic or alkyl aromatic residue (page 6, lines 1 to 3).

Further, there was no evidence on file that the concentrations of 0.01 to 30 wt.-% of an ethoxylated nonionic surfactant and the selection of the HLB range of 10 to 14 were critical.

The HLB range consisting anyhow of commonly used values in this field, neither this range nor anyone of the features under consideration can render the claimed subject-matter inventive.

2.8 Consequently, the subject-matter of Claim 1 does not involve an inventive step. The requirements of Article 56 EPC are not met.

Order

For these reasons it is decided that:

The patent is revoked.

The Registrar:

The Chairman:

G. Rauh

P. Krasa