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D E C I S I O N
of 13 July 2004

Case Number: T 0245/01 - 3.3.6

Application Number: 94915115.3

Publication Number: 0700428

IPC: C11D 17/06

Language of the proceedings: EN

Title of invention:
Detergent compositions

Patentee:
UNILEVER PLC, et al

Opponent:
Henkel KGaA

Headword:
PAS/Ni ratio/UNILEVER

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (main request) yes"

Decisions cited:
-

Catchword:
-



Case Number: T 0245/01 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 13 July 2004

Appellant: UNILEVER PLC
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted 29 December 2000
revoking European patent No. 0700428 pursuant
to Article 102(1) EPC.**

Composition of the Board:

Chairman: P. Krasa
Members: G. N. C. Raths
J. H. Van Moer

Summary of Facts and Submissions

- I. This appeal is from the Opposition Division's decision to revoke European patent No. 0 700 428 concerning a particulate detergent composition.
- II. The opponent (hereinafter respondent) in its notice of opposition sought revocation of the patent in suit on the grounds of lack of novelty (Articles 100(a), 54 EPC) and lack of inventive step (Articles 100(a), 56 EPC) and cited, *inter alia*, the following document:
- (2): EP-A-0 460 925.
- III. The proprietor (hereinafter appellant) had filed a main request under cover of the letter dated 29 December 1999 and an auxiliary request under cover of the letter dated 9 October 2000 which, however, is of no importance for the present decision.

Claim 1 of the main request before the Opposition Division read:

"1. A particulate detergent composition having a bulk density of at least 700 g/l, comprising:

(a) from 15 to 35 wt% of a surfactant system consisting essentially of:

(i) primary C₈-C₁₈ alkyl sulphate, and

(ii) ethoxylated nonionic surfactant which is a primary C₈-C₁₈ alcohol having an average degree of ethoxylation within the range of from 3 to 8,

the ratio of (i) to (ii) being within the range of from 0.68:1 to 2:1;

(b) from 10 to 35 wt% (anhydrous basis) of zeolite P having a silicon to aluminium ratio not exceeding 1.33 (zeolite MAP);

(c) optionally from 0 to 30 wt% of a water soluble organic builder;

(d) optionally other detergent ingredients to 100 wt%."

Dependent claims 2 to 7 represent specific embodiments of the subject-matter of Claim 1.

The Opposition Division held that the subject-matter of Claim 1 of both the main and auxiliary requests lacked an inventive step, in particular, in view of document (2) and revoked the patent in suit.

IV. The appellant lodged an appeal against this decision. Under cover of the letter dated 26 April 2001, it filed experimental evidence with respect to the ratio primary alkyl sulphates:nonionic surfactant (hereinafter PAS/NI ratio) which is 0.68:1 to 2:1.

V. The appellant's arguments were, in summary, as follows:

The PAS/NI ratio from 0.68:1 to 2:1 is relevant for the claimed compositions since outside this range there is a deterioration of the detergency power.

VI. The respondent did not present counter-arguments. Under cover of the letter dated 4 December 2003 it informed that it would not attend oral proceedings which were scheduled to take place on 10 March 2004. Thereupon, the oral proceedings were cancelled by the Board.

VII. The appellant requests maintenance of the patent on the basis of the main request filed under cover of the letter dated 29 December 1999 or, alternatively of the auxiliary request filed under cover of the letter dated 9 October 2000.

Reasons for the Decision

1. *Main request*

1.1 Article 123 EPC

Claim 1 of the main request differs from Claim 1 as originally filed in that

- the upper concentration range of "40 wt%" of the surfactant system in a) was replaced by "35 wt%" and the upper concentration range of zeolite P of "45 wt%" by "35 wt%" and that
- the bulk density "of at least 650 g/l" was replaced by "at least 700 g/l".

Both concentration range limits of 35 wt% find their basis in the description as originally filed (page 3, lines 15 and 13, respectively; patent in suit, page 3, line 15 and page 4, line 10, respectively).

The bulk density of "at least 700 g/l" finds its support in the application as originally filed (page 3, lines 28 to 30; patent in suit, page 2, lines 51 and 52).

The Board is satisfied that Claim 1 meets the requirements of Article 123 EPC.

1.2 Novelty

The Board agrees with the Opposition Division in that document (2) does not disclose a combination of all the features falling within the scope of Claim 1. The Board is satisfied that the subject-matter of Claim 1 is novel and meets the requirements of Articles 52(1) and 54(1), (2) EPC.

Since novelty was not in dispute in the appeal proceedings, no further arguments need to be given.

1.3 Inventive step

1.3.1 According to the patent in suit the technical problem to be solved was to avoid a deterioration in detergency and in powder properties (page 2, lines 22 to 24).

1.3.2 A high detergency was also the objective of document(2)(page 2, lines 23 to 25). In essence document (2) differs from the patent in suit in that no specific PAS/NI ratio is disclosed.

1.3.3 In view of document (2), the problem underlying the patent in suit may be redefined as the provision of a particulate detergent composition having improved detergency properties.

Under cover of the letter dated 26 April 2001 the appellant had filed experimental data displayed in tables 1 and 2.

Formulation A, reproduced in tables 1 and 2, had already been cited in the patent in suit (see pages 6 and 7, specifically page 7, lines 18 and 19) as comparative example. Formulations 16 and 18 of tables 1 and 2 are representative for the state of the art according to document (2). The PAS/NI ratio for formulation 16 was 3.08:1, for formulation 18 4.01:1, for formulation A 0.45:1. All these ratios lie outside the claimed range of 0.68:1 to 2:1. Formulations 16, 18 and A show an increase in fabric residue (as indicated by visual assessment) on black cotton and an increase in the dispenser drawer residues whereas the formulations 1 to 5 according to the invention show no fabric residue on black cotton and no residue in the dispenser drawing (Report annexed to the letter dated 26 April 2001, 3.Results and Discussion, lines 1 to 8 from the bottom).

All these data show that the problem underlying the patent in suit has been plausibly solved.

- 1.3.4 The question which remains to be decided is whether the solution to this technical problem, i.e. the choice of the ratio primary alkyl sulphate to ethoxylated nonionic surfactant of 0.68:1 to 2:1, involved an inventive step or not.

1.3.5 Document (2) taught to use a particulate detergent composition built with 17 to 35 wt% of non soap detergent-active material comprising, *inter alia*, from 5 to 35 wt% of an anionic surfactant component and optionally from 0 to 10 wt% of a nonionic surfactant.

1.3.6 At the best, the skilled person could have derived from the concentration ranges of the components at stake a ratio "anionic surfactant to nonionic surfactant" of from 0.5:1 to 35:0.

However, there was no incentive in document (2) to focus on the PAS/NI ratio, let alone on the specific ratio of primary C₈-C₁₈ alkyl sulphate to ethoxylated surfactant of a C₈-C₁₈ alcohol having an average degree of ethoxylation within the range of from 3 to 8.

The skilled person could not derive from document (2) that the claimed PAS/NI ratio was of particular interest. There was also no pointer in this citation or any other document on file that the exploration of this avenue might lead to any improvement in detergency, i.e. no fabric residues, and in detergent properties, i.e. no residue in the dispenser drawer.

Hence, the subject-matter of Claim 1 was not obvious and, thus, involves an inventive step.

1.3.7 Claim 1 meets the requirements of Article 56 EPC.

1.3.8 Claims 2 to 7 derive their patentability from that of Claim 1.

2. Under these circumstances it is not necessary to deal with the Appellant's auxiliary request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent on the basis of claims 1 to 7 of the main request filed under cover of the letter dated 29 December 1999 and a description to be adapted thereto.

The Registrar:

The Chairman:

G. Rauh

P.Krasa