BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

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

D E C I S I O N
of 7 September 2004

Case Number: T 0820/00 - 3.3.6

Application Number: 95900109.0

Publication Number: 0730638

IPC: C11D 17/06

Language of the proceedings: EN

Title of invention:
Detergent compositions

Patentee:
UNILEVER PLC, et al

Opponents:
Henkel KGaA
The Procter & Gamble Company

Headword:
Citrate/UNILEVER

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Novelty (main request) - no"
"Inventive step (auxiliary requests 1 to 4) - no"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0820/00 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 7 September 2004

Appellants: (Proprietors of the patent)	UNILEVER PLC Unilever House, Blackfriars, London EC4P 4BQ (GB) and UNILEVER N.V. NL-3013 AL Rotterdam (NL)
Representative:	Waldren, Robin Michael Lloyd Wise Commonwealth House 1-19 New Oxford Street London WC1A 1LW (GB)
Respondent I: (Opponent 01)	Henkel KGaA VTP (Patente) D-40191 Düsseldorf (DE)
Representative:	-
Respondent II: (Opponent 02)	The Procter & Gamble Company One Procter & Gamble Plaza Cincinnati, Ohio 45202 (US)
Representative:	Lawrence, Peter Robin Broughton GILL JENNINGS & EVERY Broadgate House 7 Eldon Street London EC2M 7LH (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 4 August 2000 revoking European patent No. 0730638 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: P. Krasa
Members: G. N. C. Raths
U. J. Tronser

Summary of Facts and Submissions

I. This appeal is from the Opposition Division's decision to revoke, for lack of inventive step, European patent No. 730 638 relating to detergent compositions.

II. Two oppositions had been filed, both based on lack of novelty and inventive step (Article 100(a) EPC) and that of opponent 2 (hereinafter respondent II) also on insufficiency of disclosure (Article 100(b) EPC).

Among others the following documents were cited in support:

(1) EP-A-0 403 084;

(2) EP-A-0 349 201;

(3) EP-A-0 402 111;

(4) JP-A-62-62899 (German translation);

(5) Sodium citrate, Product specification, Boehringer Ingelheim; and

(6) EP-A-0 220 024.

During the opposition procedure also document

(14) EP-A-0 509 787

was cited.

III. During the oral proceedings before the Opposition Division, the proprietor (hereinafter appellant) had requested the maintenance of the patent as granted containing seventeen claims (main request), or alternatively on the basis of an amended set of five claims as auxiliary request.

IV. Claim 1 of the main request read as follows:

"1. A particulate detergent composition having a bulk density of at least 650 g/l which is not the product of a spray-drying process, the composition consisting of a substantially homogeneous granular base and optionally postdosed ingredients, the composition comprising

(a) from 15 to 50 wt% of an organic surfactant system,

(b) from 20 to 70 wt% (anhydrous basis) of alkali metal aluminosilicate builder,

(c) from 0.5 to 40 wt% of a water-soluble salt of citric acid,

(d) optionally other detergent ingredients to 100 wt%,

characterised in that at least 0.5 wt% (based on the total composition) of the citric acid salt (c) is within the substantially homogeneous granular base, and in that all of the citric acid salt (c) that is within the substantially homogeneous granular base has a Rosin Rammler particle size of less than 800 μm."

Independent Claim 11 is directed to a process for the preparation of a particulate detergent composition.

Independent Claim 17 is directed to the use of a citric acid salt to improve the dissolution properties of a particulate detergent composition.

Product claims 2 to 10 and the process claims 12 to 16 are dependent on the respective independent claims.

V. The Opposition Division revoked the patent for lack of inventive step because document (6) would teach to improve the solubility of detergent powder in the wash liquor by granulating, for instance in example II, a preblend comprising, among others, citrate; the only difference, i.e. an amount of zeolite being below the one used in Claim 1 of the patent in suit, would not be relevant since a skilled person would, in the light of the teaching of document (6), also use higher amounts; in the patent in suit no specific effect would be based on the higher zeolite concentration (decision of the Opposition Division, page 12, lines 8 to 29).

VI. An appeal was filed against this decision. The appellant contested the Opposition's Division reasons for finding a lack of inventive step.

The appellant submitted in essence orally and in writing

– that the particle size distribution of citrate was missing in the granular (page 2, line 14) composition according to example VIII of document (14) (page 12);

– that the subject-matter of Claim 1 was distinguished from the composition according to example II of document (6) because of the different bulk density but did not differ because of the zeolite content, as set out by the Opposition Division;

– that document (6) was entirely concerned with the problem of improving solubility in the wash liquor whereas the patent in suit was concerned with improving dispensing of high bulk density powders into the wash liquor. The patent in suit therefore solved a technical problem different from that solved in document (6) and not addressed in the latter. The avoidance of residues in the dispenser was caused by granular detergent composition comprising discrete particles of alkaline metal citrate. Hence, the solution to this problem involved an inventive step.

VII. Both respondents refuted the arguments of the appellant and referred to their submissions during the opposition proceedings.

(a) In its letter dated 19 October 1998 respondent I submitted in essence

– that the subject-matter of Claim 1 was not new in view of document (1) or (2) or (3) or (4); further that the subject-matter of Claims 11 and 17 was not new in view of documents (1) and (2).

– that according to document (5) citrate particles having the required Rosin Rammler distribution

were available on the market so that in combination with one of the documents (1) to (4) the subject-matter of Claim 1 would lack an inventive step.

(b) Respondent II by agreeing in its letter 9 August 2004 with the conclusions found by the Opposition Division implicitly desisted from its objection under Articles 83 and 100(b) EPC raised in the letter dated 15 October 1998 and the letter dated 26 May 2000; it insisted, however, on the fact that the Rosin Rammler particle size (abbreviated RRps) mentioned in Claim 1 concerned the final product and not the starting material. It also mentioned that the manufacturing process may comprise a dry-spraying step, if it is not the last one.

It further found with respect to novelty

in view of example VIII of document (14) that the RRps had to be considered as an arbitrary limitation;

in view of example II of document (6) that the reasoning of the Opposition Division was correct in so far as the zeolite content had to be calculated on anhydrous basis and was therefore lower than in the patent in suit. Bulk densities above 650 g/l were mentioned by document (6).

In the light of document (6), increasing the amount of zeolite would not involve an inventive step.

Eventually, the definition of the RRps was questioned by the respondents.

VIII. Under cover of the letter dated 5 August 2004 the appellant replaced the auxiliary request by four auxiliary requests:

First auxiliary request:

Claim 1 of the first auxiliary request results from a combination of Claims 11 and 13 as granted and reads:

"A process for the preparation of a particulate detergent composition having a bulk density of at least 650 g/l, which comprises mixing and granulating surfactants, alkali metal aluminosilicate builder, a water soluble salt of citric acid and optionally other detergent ingredients to form a substantially homogeneous granular base, and optionally postdosing further detergent ingredients, to form a final composition comprising

(a) from 15 to 50 wt% of an organic surfactant system,

(b) from 20 to 70 wt% (anhydrous basis) of alkali metal aluminosilicate builder,

(c) from 0.5 to 40 wt% of a water-soluble salt of citric acid,

(d) optionally other detergent ingredients to 100 wt%,

wherein discrete particles are present throughout the mixing and granulation

characterised in that at least 0.5 wt% (based on the total composition) of the citric acid salt (c) is within the substantially homogeneous granular base, and in that all of the citric acid salt (c) that is within the substantially homogeneous granular base has a Rosin Rammler particle size of less than 800 μm."

Claims 2 to 5 represented preferred embodiments of Claim 1.

Second auxiliary request:

The second auxiliary request differed from the first auxiliary request in that in Claim 1 the passage "and the citric acid salt to be incorporated in the base powder has a Rosin Rammler particle size of less than 800 μm" was added at the end of said claim and the passage "wherein discrete particles are present throughout the mixing and granulating process" was deleted.

Claims 2 to 6 represented preferred embodiments of Claim 1.

Third auxiliary request:

The third auxiliary request differed from the second auxiliary request in that the passage "wherein discrete particles are present throughout the mixing and granulating process" was inserted between "100 wt%," and "characterised".

Claims 2 to 5 represented preferred embodiments of Claim 1.

Fourth auxiliary request:

The fourth auxiliary request differed from the third auxiliary request in that in Claim 1 the passage "of less than 800 μm and.....of less 800 μm" was replaced by "within the range of from 100 to 500 μm and the citric acid salt to be incorporated in the base powder has a Rosin Rammler particle size from 100 to 500 μm".

Claims 2 to 4 are dependent claims.

IX. In its letter dated 9 August 2004, respondent II argued that none of the four auxiliary requests would be allowable.

X. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted or, on the basis of one of the auxiliary request 1 to 4 submitted under cover of the letter dated 5 August 2004.

The respondents requested that the appeal be dismissed.

XI. Oral proceedings before the Board took place on 7 September 2004.

Reasons for the Decision

1. *Main request*

1.1 Claim 1

1.1.1 Claim 1 is directed to a particulate detergent composition having a bulk density of at least 650 g/l which, *inter alia*, is not the product of a spray-drying process, and which comprises as component (c) a citric acid salt whereby all of the citric acid salt that is within the substantially homogeneous granular base has a RRps of less than 800 μm.

1.1.2 Prior to investigate novelty and inventive step of the claimed subject-matter, it is mandatory to establish what this subject-matter is. In the present case two features of the claimed process pose problems:

(i) The first issue to be decided is whether the manufacturing process according to the patent in suit allows for a spray-drying step or not and whether its absence could be a distinguishing feature for the product obtained by such manufacturing process.

The Board concludes from the clear wording of Claim 1 "A particulate...which is not the product of a spray-drying process..."(see point IV, above) that the process for manufacturing the detergent composition may comprise a spray-drying step, but it cannot be the last step of the manufacturing process; for instance, a spray-drying process could be followed by a mixing and a granulating step.

(ii) As to the particle size of the citric salt the question was to which stage the RRps value "of less than 800 μm" referred.

It is clear that the selection of a citrate having a RRps of less than 800 μm at the start would result in a final product meeting the desired size requirement. The RRps of the citrate starting material not being a feature of the claim, it is not clear however whether a RRps of less than 800 μm could be verified in a final product if the unknown RRps of the starting material was greater and would be matching the respective requirement of the claim.

The Board finds that the RRps of less than 800 μm according to Claim 1 relates to the citrate in the final product. This results from the explicit and clear wording of Claim 1.

The description of the patent in suit does not contain any information how to establish the RRps of the citrate in the granular base product. Since the latter comprises not only citric acid salt but - at least - also a surfactant and a builder, a skilled person does not know how to verify whether a final product comprising all these components satisfies the required RRps for the citrate.

The appellant argued that the citrate particle size characteristics were measurable by a skilled person availing itself of the common general knowledge by analyzing cross-sections of product samples.

The respondents contested the existence of such common general knowledge. Thus, in the absence of appropriate evidence, the Board cannot accept the argument of the appellant that the RRps of the citrate in the final product could be established by a skilled person.

1.1.3 Therefore, the particle size distribution and thus, the Rosin Rammler particle size in the final product are features which are not determinable and consequently, the subject-matter of Claim 1 has to be interpreted in a way that the RRps cannot serve as a distinguishing feature of the obtained product.

1.1.4 So, Claim 1 has to be read as if it was directed to a particulate detergent composition having a bulk density of at least 650 g/l which was not the product of a spray-drying process, the composition comprising

(a) from 15 to 50 wt% of an organic surfactant system,

(b) from 20 to 70 wt% (anhydrous basis) of alkali metal aluminosilicate builder,

(c) from 0.5 to 40 wt% of a water-soluble salt of citric acid.

1.2 Novelty

1.2.1 The base powder composition according to example VIII of document (14) has a bulk density of 850 g/l and comprises, in parts by weight (pbw),
(a) 6 pbw of primary alkyl sulphate and 13 pbw nonionic surfactant,
(b) 36 pbw of zeolite AA (anhydrous basis) and

(c) 6 pbw of sodium citrate, the total composition including the other ingredients adding up to 76.7 pbw (100 weight%), which gives 24.8 wt% of (a), 46.8 wt% of (b) and 7.8 wt% of (c).

As to the question whether the product is obtained by a process which does not have a spray-drying step as the last manufacturing step reference is made to the following passage: "The bleach component including the catalyst is normally dry-mixed with the densified powder as one of the last steps of the manufacturing process" (page 6, lines 11 to 13).

So, the composition of the base powder according to example VIII of document (14) is a product falling within the scope of Claim 1 as defined under point 1.1.4.

Hence, the subject-matter of Claim 1 is not novel and, therefore, does not satisfy the requirements of Articles 52(1), 54(1) and (2) EPC.

The main request is not allowable.

2. *First auxiliary request*

2.1 Articles 84 and 123 EPC

Claim 1 differs in essence from Claim 1 of the main request in that it is directed to a process for manufacturing the granular detergent composition and in that it comprises the feature "wherein discrete particles are present throughout the mixing and granulation".

Claim 1 is based on Claims 11 and 13 as originally filed. Keeping in mind that the interpretation under point 1.1.4 holds, *mutatis mutandis*, also for this Claim 1, the Board is satisfied that Claim 1 meets the requirements of Articles 84 and 123 EPC. Since no objections were raised, no further reasons have to be given.

2.2 Novelty

The subject-matter of Claim 1 is novel over example VIII of document (14) since the feature "wherein discrete particles are present throughout the mixing and granulation" is missing in said document.

The Board is satisfied that the subject-matter of Claim 1 was not anticipated by any of the cited documents. Hence, it follows that the subject-matter of Claim 1 meets the requirements of Article 54(1) and (2) EPC.

2.3 Inventive step

2.3.1 The objective of the patent in suit was to improve the delivery of a detergent powder of high bulk density (page 2, lines 29 to 31, 46 and 47; page 3 lines 13 to 16) whereby "Delivery is a two-step process: the first is the dispensing of the powder into the wash liquor, either from the dispenser drawer of the washing machine or from a dispensing device (a wash ball or similar) supplied by the powder manufacturer and the second is dissolution of the powder once it arrives in the wash water." (page 2, lines 25 to 28).

2.3.2 Document (14) is discarded for assessing inventive step since it concerns a different problem, namely the improvement of pack volume and of low temperature bleach performance (page 3, lines 12 and 13). In contrast thereto, document (6) relating to granular detergent compositions having improved solubility dealt with a similar problem. Contrary to what the appellant argued, document (6) not only addressed dissolution but also the dispensing property, albeit in different words. So, according to document (6) the integrity of the granules and their structure were of importance; the objective was to obtain good solubility and to minimize gelling when the surfactants contact the wash water and to avoid mushy granules at high surfactant levels (page 3, lines 38 to 46). Aiming at minimizing of gelling, in the Board's judgment, tackles the dispensing problem.

As to the manufacturing process, the granular detergent compositions can be obtained by drying an aqueous slurry comprising, *inter alia*, the surfactants. The soluble detergent granules are admixed or agglomerated with builders and other optional detergent ingredients; in particular, the preferred compositions are obtained by admixing the soluble granules with builders, compacting the admix at relatively low pressures and other ingredients in order to obtain finished granular detergent compositions (page 2, lines 16 to 25).

The compaction step is preferably accomplished by using equipment that applies a relatively uniform compaction pressure, for example, by using compaction rollers with smooth (i.e. non corrugated) surfaces. After compaction,

the composition is preferably granulated and screened to provide an average particle size similar to that desired for the final composition (page 4, lines 54 to 57). The final detergent composition may have preferably a bulk density of 650 to 1100 g/cm^3 (page 4, line 51).

So, the manufacturing process according to document (6) does not necessitate a spray-drying step as ultimate step and, in this respect, satisfies the requirements of Claim 1 of the first auxiliary request.

Therefore, the Board took this document as the starting point for evaluating inventive step.

2.3.3 In the light of document (6) the problem underlying the patent in suit can be seen in the provision of an alternative granular detergent product.

2.3.4 The examples prove that this problem was credibly solved. The question remains whether or not the claimed solution to this technical problem involved an inventive step.

2.3.5 The gist of the invention according to the patent in suit was based on the incorporation of citric acid salt in the detergent powder. The requirement to incorporate said citrate in form of particles having a particular RRps became void since the appellant failed to show a technical effect of this requirement (see point 1.1.4), let alone that this RRps was not determinable (see points 1.1.2 and 1.1.3).

So, the question is whether or not the mere addition of citric acid salt to detergent powder compositions could contribute to an inventive step.

The detergent composition of example II of document (6) comprised, *inter alia*, citric acid salt. Even if citric acid salt was said to be added as a builder in the detergent composition of said example (page 4, lines 2 to 6), it acts as a delivery improvement agent according to the patent in suit (page 2, lines 29 to 31), independently of the purpose of the use.

The worked example II of document (6) differs from the granular detergent composition as defined under point 1.1.4 in that the concentration of the aluminosilicate is slightly beyond the required level of 20 weight percent. However, according to claim 1 of document (6) and the description (page 2, lines 45 to 61) the ratio of (a) surfactant to (b) alkali metal silicate may be from 1.5:1 to 6:1. Since the objective according to document (6) is to obtain very soluble granular detergent compositions containing high levels of surfactants (see page 2, lines 16 and 17), the range of surfactant concentration (a) being from 30 to 85 weight%, a skilled person, respecting for example the ratio (a):(b) = 1.5:1, would obtain without any ingenuity concentrations of aluminosilicate builder higher than 20 weight percent as soon as he looks for alternatives containing high amounts of surfactant within the generic teaching of document (6). Thus, starting out from example II of document (6) and increasing the concentration of aluminosilicate without any demonstration that this causes an unexpected technical effect amounts to an arbitrary measure within

the ordinary routine of a skilled practitioner and cannot contribute to an inventive step.

2.3.6 The appellant argued that the RRps would be a feature responsible for the good delivery properties of the obtained granular detergent. In the absence of any proof the Board cannot accept this argument.

2.3.7 For all these reasons the subject-matter of Claim 1 does not involve an inventive step.

3. *Second, third and fourth auxiliary requests*

3.1 Articles 84 and 123 EPC

Claim 1 of the second, third and fourth auxiliary requests are directed to a process, like Claim 1 of the first auxiliary request, and find their basis either in the description (page 41, lines 41 to 43) and/or in claims 12 and 13.

The Board is satisfied that Claim 1 of all the requests mentioned above meets the requirements of Articles 84 and 123 EPC. Since no objections were raised in this respect, no further reasons need to be given.

3.2 Novelty

The subject-matter of Claim 1 of each of the second, third and fourth auxiliary request comprises a process having each a feature which was not disclosed in combination with the other features in any of the cited documents.

Therefore, the subject-matter of Claim 1 of the second, third and fourth request meets the requirements of Article 54(1) and (2) EPC.

3.3 Inventive step

3.3.1 The reasoning regarding the starting point for evaluating inventive step, i.e. document (6), and the problem underlying the patent in suit in the light of this document as well as the problem-solution approach are the same as outlined above under points 2.3.1 to 2.3.5.

3.3.2 The subject-matter of Claim 1 of the second, third and fourth auxiliary request does not involve an inventive step (Article 56 EPC)

4. Neither the main nor any of the auxiliary requests are allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Rauh P. Krasa