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D E C I S I O N
of 14 July 2004

Case Number: T 0557/02 - 3.3.6

Application Number: 97933428.1

Publication Number: 0915952

IPC: C11D 3/39

Language of the proceedings: EN

Title of invention:
Method for activation of bleaches

Applicant:
THE PROCTER & GAMBLE COMPANY

Opponent:
-

Headword:
Method for treating substrates/PROCTER & GAMBLE

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (main request) - no: application of a known method to different substrates - improved performance of the selected bleach not shown for the whole range of substrates to be treated according to the claimed method"
"Inventive step (auxiliary request) - yes: improved performance of the selected bleach on the specific treated substrate"

Decisions cited:
-

Catchword:
-



Case Number: T 0557/02 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 14 July 2004

Appellant: The Procter & Gamble Company
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Cincinnati, Ohio 45202 (US)

Representative: Goodier, Claire-Louise
NV Procter & Gamble Services SA
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 18 December 2001
refusing European application No. 97933428.1
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P. Krasa
Members: L. Li Voti
C. Rennie-Smith

Summary of Facts and Submissions

I. This appeal lies from the decision of the Examining Division to refuse European patent application no. 97 933 428.1, relating to a method for treating a hard surface.

II. In its decision, the Examining Division, referred to documents

(1): DE-A-3703049 and

(3): EP-A-0024304.

The Examining Division found that

- it was known from documents (1) and (3) that microwaves activated bleaching agents in cleaning operations;
- the skilled person would therefore have expected this type of activation of bleaching agents to be suitable for removing stains from any kind of surface, including plastic dishware and kitchenware;
- the subject-matter of claim 1 therefore lacked an inventive step;
- claim 10, relating to a product comprising a known cleaning composition comprising a bleaching agent and instructions for its use, had to be considered as relating to a presentation of information and therefore was not patentable (Article 52(2)d EPC).

III. An appeal was filed against this decision by the Applicant (Appellant).

The Appellant filed, during the oral proceedings held before the Board on 14 July 2004, two sets of claims as main and first auxiliary request, respectively.

The wording of Claim 1 of the main request differs from that of the request considered before the first instance in its decision *inter alia* insofar as it requires the presence of a diacyl peroxide as bleaching agent. This claim reads as follows:

" 1. A method for treating a substrate selected from a plastic dishware or kitchenware comprising the steps of:
a) subjecting, in the presence of water or a solvent which generates heat under microwave radiation, a cleaning composition comprising a diacyl peroxide to microwaves for a sufficient period of time to activate said diacyl peroxide; then
b) contacting said substrate with said cleaning composition."

The main request contains further dependent claims 2 to 8 relating to specific embodiments of the claimed method and claim 9 relating to the use of a cleaning composition comprising diacyl peroxide in the previously claimed method.

The set of claims in the auxiliary request differs from that of the main request only insofar as claims 1 and 9 no longer list kitchenware as one of the selected substrates to be treated.

Both sets of claims do not comprise the claim considered by the first instance not to be patentable under Article 52(2)d EPC.

IV. The Appellant submitted orally and in writing that

- the cited prior art did not relate to the treatment of plastic surfaces or of kitchenware;
- the experimental report filed under cover of a letter dated 27 August 2001 showed that benzoyl peroxide, a diacyl peroxide, performed much better than other commonly used bleaches in the removal of stains or soils from plastic kitchenware or dishware in a method wherein the bleaching composition was applied to the substrate to be cleaned and then microwaved;
- similar results had thus to be expected in a method as claimed wherein the bleaching composition was first microwaved and then applied to the substrate to be cleaned;
- moreover, similar results had also to be expected in the treatment of other materials of which kitchenware can be made;
- since the superior performance of diacyl peroxide was not to be expected in the light of the teaching of the prior art, the claimed subject-matter involved an inventive step.

- V. The Appellant requests that the decision of the first instance be set aside and that a patent be granted on the basis of either the main request or of the first auxiliary request filed during oral proceedings.

Reasons for the Decision

1. *Main request*

1.1 Articles 84, 123(2), 54 and 52(2)d EPC

The Board is satisfied that the claims according to the main request comply with the requirements of Articles 84, 123(2) and 54 EPC. Moreover there is no need to deal with Article 52(2)d EPC (see point III above).

1.2 Inventive step

- 1.2.1 The subject-matter of claim 1 according to the main request relates to a method of treating either plastic dishware or kitchenware with a composition comprising a diacyl peroxide bleach activated by means of microwaves (see also page 1, lines 1 to 20; page 2, lines 34 to 37; page 3, lines 7 to 13 and page 4, lines 2 to 3).

The description of the present application explains that it was known to use bleaches for removing stains from various substrates but there was a need for a method of bleaching under which bleaches are stable, perform efficiently and effectively under mixed soil load conditions and are effective for a variety of substrates (page 2, lines 25 to 33).

Document (1) describes a method of bleaching surfaces, in particular of removing stains from textile surfaces, by applying to the surface to be treated a bleaching composition, e.g. an aqueous bleaching solution, and then subjecting the treated surface to microwaves in order to activate the bleach (see claim 1; column 3, lines 14 to 22; column 4, lines 26 to 30; column 5, lines 32 to 36). Such a method permits the control of the bleach decomposition and an efficient and effective bleaching of the treated surface without the use of high temperatures and without high costs (column 3, lines 4 to 54).

Therefore the Board takes this document as the most suitable starting point for the evaluation of inventive step of the claimed subject-matter.

The method disclosed in document (1) differs from the subject-matter of claim 1 according to the main request insofar as it is not applied to plastic dishware or kitchenware, it involves first the treatment of the substrate by the bleach and then microwaving instead of first microwaving the bleach and then applying it to the substrate, and it does not explicitly teach the use of a diacyl peroxide bleach.

- 1.2.2 The Appellant filed an experimental report before the first instance under cover of a letter dated 27 August 2001. In this report it was shown that benzoyl peroxide, a diacyl peroxide, performed much better in the removal of stains or soils from plastic kitchenware or dishware than other commonly used chlorine or hydrogen peroxide bleaches when the bleaching composition was first

applied to the substrate to be cleaned and then microwaved.

Similar results had thus to be expected according to the Appellant's submissions in the method of the present claim 1 wherein the bleaching composition is first microwaved and then applied to the substrate to be cleaned as well as in the treatment of other materials of which kitchenware can be made.

The alleged technical problem underlying the claimed invention can thus be defined according to the Appellant as the selection of a bleaching agent which, in a method including the activation of bleach by microwaving, performs better than other commonly used bleaches in the treatment of plastic dishware or kitchenware, e.g. in the removal of stains.

However, the Board finds that the application as filed did not contain any information about the different performance of different bleaches on different surfaces under the conditions of the claimed process (see page 8, line 6 to page 10, line 24) and, in fact, diacyl peroxides, hydrogen peroxides and chlorine bleaches were equally preferred (see page 4, lines 2 to 4). A similar teaching can also be found in document (1) (see column 4, line 26 to column 5, line 15).

Moreover, even though the experimental evidence submitted shows the better performance of the diacyl peroxide on plastic or thermoplastic surfaces in comparison to a chlorine and a hydrogen peroxide bleaching agent, it does not show that such a better

performance is maintained on other surfaces of which kitchenware can be made, e.g. glass, wood or ceramic.

The Board thus cannot accept, in the absence of any evidence, that the effect shown on plastic or thermoplastic substrates has also to be expected on very different substrates, e.g. wood, ceramic or glass, for which a different cleaning efficiency has to be expected.

The Board concludes therefore that the alleged improved performance of diacyl peroxides has been supported only for the treatment of plastic dishware but not for the treatment of any type of kitchenware and that therefore the alleged technical problem cannot be considered to have been solved by all the embodiments encompassed by the wording of claim 1.

The Board has no reason to doubt that, as stated by the Appellant, a similar effect would be achieved by first microwaving the bleach and then applying it to the substrate; however, since this specific sequence of process steps does not bring about any improvement as compared to a process involving first treating the substrate with the bleach and then microwaving, as admitted by the Appellant during oral proceedings, this distinctive feature can be disregarded in the evaluation of inventive step.

The technical problem underlying the present invention as represented in claim 1 has thus to be reformulated in the light of the teaching of document (1) in simpler terms as the application of the known method of treatment of document (1) to other substrates.

The Board has no doubt that the claimed subject-matter solved this existing technical problem.

- 1.2.3 Document (3) discloses a method for disinfecting surfaces, e.g. textile surfaces or plastic surfaces, by means of a process involving the treatment of such surfaces with a bleaching composition, e.g. an aqueous bleaching solution, which could comprise e.g. a chlorine or a hydrogen peroxide or a diacyl peroxide bleach, and then microwaving (see page 2, line 31 to page 3, line 25; page 6, line 34 to page 7, line 27). This document teaches also that microwaves are able to permeate not only the surface but also the inner of the treated substrates, thus resulting in a more efficient bleaching (see page 3, line 25 to page 4, line 1).

In the light of this technical teaching the skilled person would have thus expected the method of bleaching disclosed in document (1) to be applicable to any surface and also to the use of diacyl peroxides as bleaching agents.

Similarly to the first instance (see point 2.1 of the first instance decision), the Board finds thus that it was obvious to the skilled person to apply a method of cleaning including the activation of bleaches by microwaves as described in document (1) to the use of diacyl peroxides and to the cleaning of any type of substrate and to expect an efficient removal of stains against which these bleaches are known to be effective.

The Board concludes therefore that the subject-matter of claim 1 does not comply with the requirements of Article 56 EPC.

The main request has thus to be dismissed.

2. *Auxiliary request*

2.1 Articles 84, 123(2), 54 and 52(2)d EPC

The Board is satisfied that the claims according to the auxiliary request satisfy the requirements of Articles 84, 123(2) and 54 EPC. Moreover there is no need to deal with Article 52(2)d EPC (see point III above).

2.2 Inventive step

2.2.1 Claim 1 of the auxiliary request differs from the respective claim 1 of the main request insofar as the claimed method is limited to the treatment of plastic dishware.

The Board has thus no reason to doubt that the evidence introduced by the Appellant convincingly show that diacyl peroxides perform better than other currently used bleaches in a process as claimed (see point 1.2.2 above).

2.2.2 The Board finds thus that the alleged technical problem, i.e. the selection of a bleaching agent which, in a method of cleaning including the activation of bleach by microwaving, performs better than other commonly used bleaches in the treatment of plastic dishware, e.g.

in the removal of stains, has been convincingly solved by the claimed subject-matter.

- 2.2.3 Since the cited prior art does not suggest that diacyl peroxides could perform better than other bleaches on plastic dishware under the conditions used in the claimed method, the Board concludes that the subject-matter of the claims according to the auxiliary request complies with the requirements of Article 56 EPC.

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 grant a patent on the basis of the first auxiliary request filed during oral proceedings and a description to be adapted thereto.

The Registrar:

The Chairman:

A. Wallrodt

P. Krasa