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**Datasheet for the decision
of 16 October 2013**

Case Number: T 0887/12 - 3.3.06

Application Number: 03730313.8

Publication Number: 1504083

IPC: C11D11/00, C11D7/24, C11D3/18,
C11D3/382

Language of the proceedings: EN

Title of invention:
Use of a hydrophobic component in an automatic dishwashing
process

Patent Proprietor:
Reckitt Benckiser N.V.

Opponent:
Henkel AG & Co. KGaA

Headword:
Hydrophobic stain remover/RECKITT

Relevant legal provisions:
EPC Art. 52(1), 56

Keyword:
Inventive step - (yes) - Non-obvious use of known compounds

Decisions cited:
G 0006/88

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

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Case Number: T 0887/12 - 3.3.06

**D E C I S I O N
of Technical Board of Appeal 3.3.06
of 16 October 2013**

Appellant: Henkel AG & Co. KGaA
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Representative: Henkel AG & Co. KGaA
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Respondent: Reckitt Benckiser N.V.
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 14 February
2012 rejecting the opposition filed against
European patent No. 1504083 pursuant to Article
101(2) EPC.**

Composition of the Board:

Chairman: B. Czech
Members: E. Bendl
J. Geschwind

Summary of Facts and Submissions

I. The appeal lies from the decision of the opposition division to reject the opposition filed against European patent No. 1 504 083.

II. The sole independent claim 1 of the patent as granted reads as follows:

"1. Use of a hydrophobic component having a density of from 0.6-1 gram/cm³ in an aqueous washing or rinsing liquor in an automatic dishwashing process to enhance the removal of coloured food stains from plastic."

Dependent claims 2 to 10 as granted relate to specific embodiments of the use according to claim 1.

III. The only ground of opposition invoked was lack of inventive step. In the contested decision, the opposition division found that the claimed use was inventive in the light of the prior art relied upon by the opponent, which included documents

D1: EP 1 167 506 A and

D3: US 5 646 101 A.

IV. Under the cover of its statement of grounds of appeal the appellant (opponent) filed comparative test results, referred to as document D6. In said statement, it held that the subject-matter of claim 1 as granted did not involve an inventive step since it did not solve the posed technical problem which, according to the opposition division, consisted in improving the removal of coloured food stains from plastic in an automatic dishwashing process.

- V. In its reply dated 8 October 2012 the respondent (patent proprietor) rebutted the objection raised by the appellant. As a precautionary measure, it filed four sets of amended claims as auxiliary requests 1 to 4.
- VI. Oral proceedings were held on 16 October 2013. The sole issue debated during the oral proceedings was whether the subject-matter claimed (main request) involved an inventive step in the light of documents D1, D3 and D6.
- VII. The appellant requested that the decision under appeal be set aside and that the European patent No. 1 504 083 be revoked.

The respondent requested that the appeal be dismissed or, in the alternative, that the patent be maintained on the basis of one of the auxiliary requests 1 to 4 submitted with letter of 8 October 2012.

- VIII. As relevant here, the arguments of the **appellant** can be summarised as follows:

Main request - Inventive step

- D1 was the closest state of the art.
- It had not been demonstrated that the addition of a hydrophobic component to known prior art dishwashing compositions resulted in an increase of the removal of coloured stains from plastic.
- D6 showed that the test method for determining the degree of staining of plastics referred to in the description of the patent in suit did not produce reliable results. The data of example 1 of the

patent in suit did not, therefore, show any effect.

- D1 mentioned the use of hydrophobic components like paraffin in automatic dishwashing compositions. As this document also concerned the removal of stains from plastic, D1 rendered the claimed subject-matter obvious.
- In addition, the combination of D1 with D3 also led to the claimed subject-matter in an obvious manner.
- Therefore, the claimed subject-matter did not involve an inventive step and was thus objectionable under Article 100(a) EPC.

The **respondent** argued essentially as follows:

Main request - Inventive step

- D1 was the closest prior art.
- An enhanced removal of food colour stain had been shown in example 1 of the patent in suit. This stain removal could be measured by any known method, including visual inspection.
- The experimental method used according to D6 did not produce reliable results and was quite different from the one described in the patent in suit.
- The teaching to use hydrophobic compounds in an automatic dishwashing process in order to enhance

stain removal from plastic was not derivable from D1 or D3.

- A combination of D1 with D3 did not lead to the claimed subject-matter either.
- Therefore, the claimed subject-matter was based on an inventive step.

Reasons for the Decision

Main request - Inventive step

1. The invention

The invention relates to the use of a hydrophobic component for enhancing the removal of coloured food stains from plastic in an automatic dishwashing process.

2. Closest prior art

- 2.1 D1 (see paragraphs [0001], [0012], [0013], [0015] and [0024]) relates to the use of diacyl and tetraacyl peroxide bleaching species for inhibiting the transfer of bleachable, i.e. coloured, food soils in a dishwashing method, preferably in automatic dishwashing, and, according to a further aspect, to enhance the removal of bleachable food soils from a plastic substrate in a dishwashing method. Moreover, the detergent compositions to be used according to D1, may include a (hydrophobic) paraffin oil component (see paragraphs [0157], [0160] and [0164]).

2.2 For the board, document D1 represents the closest state of the art in view of the similarity, compared to the patent in suit, of the issues addressed and of the features of the dishwashing composition described in this document. This was also common ground between the parties.

3. Technical problem

In the light of document D1 the technical problem can be seen in providing a further way of enhancing the removal of coloured food stains from plastic in the context of an automatic dishwashing process.

4. Solution

As the solution to this problem, the patent in suit proposes the use according to claim 1 at issue, which is characterised in particular in that "*a hydrophobic component having a density of from 0.6-1 gram/cm³*" is used "*in an aqueous washing or rinsing liquor in an automatic dishwashing process to enhance the removal of coloured food stains from plastic*".

5. Success of the solution

5.1 Claim 1 at issue is of the "use category". In decision G 6/88 (OJ 1990, 114), point 7 of the Reasons, last sentence, the Enlarged Board of Appeal indicated how this kind of claim is to be understood: "Thus with such a claim, where a particular technical effect which underlies such use is described in the patent, having regard to the Protocol, the proper interpretation of the claim will require that a functional feature should be implied into the claim, as a technical feature; for

example, that a compound actually achieves the particular effect."

Applied to the present case, this means that the enhanced removal of coloured food stains from plastic is a technical feature of claim 1.

5.2 Therefore, the appellant's line of argument, according to which no enhanced stain removal has been convincingly shown, let alone across the entire breadth (in terms of the nature of the hydrophobic component) of claim 1, appears to imply that the appellant considers the invention, i.e. the use as claimed, to be insufficiently disclosed. However, insufficiency of disclosure (in the sense of Article 100(b) EPC) was never raised as a ground for opposition. Therefore, the board does not have the power to take into account the corresponding objection of the appellant in these appeal proceedings.

5.3 The board nevertheless includes some observations regarding two arguments submitted by the Appellant in this context, namely

- a) that the patent in suit did not provide any evidence of an enhanced stain removal, or of a stain removal at all; and
- b) that the test method for determining the enhancement of stain removal as described in the patent in suit was not suitable to give any convincing results.

5.3.1 Concerning objection (a): no evidence provided

The board observes that example 1 of the patent in suit compares compositions containing a hydrophobic component with state of the art products not comprising such a component (paragraph [0043], lines 9/10). Although no quantitative result in terms of "soil removal (%)" is indicated with respect to the latter, it is expressly indicated in said paragraph, in a general manner, "*that addition of a hydrophobic component greatly enhances removal ratio of tomato stains on plastic*".

The results of the three tests are shown in table I of the patent in suit, in particular in column G referring to the soil removal caused by the addition of paraffin, olive oil and soya oil as "*hydrophobic component*". The board accepts that in the context of the description of the experiments described in paragraphs [0043] and [0044] of the patent in suit, the "*soil removal %*" values reported in table I are indicative of the degree of stain removal in the sense of claim 1, as apparent from paragraph [0045].

As acknowledged by the appellant in its letter of 4 June 2012 (page 4, last sentence of the first paragraph), the addition of a hydrophobic component to a conventional dishwashing composition is unlikely to lead to inferior results in terms of tomato stain removal than the state of the art composition itself. Accordingly, the smallest soil removal value (60%) reported in column G of table I of the patent in suit must be at least as good as the value achieved using the state of the art composition.

Enhanced removal of stains from plastic has thus been demonstrated for paraffin (67 % soil removal), olive oil (62 %) and at least in one experiment with soya oil (63 %).

5.3.2 Concerning objection (b): no meaningful test results can be achieved.

Relying on the experimental report D6, the appellant attempted to show that the experimental method described in the patent in suit was not suitable for demonstrating any effect.

However, as was convincingly argued by the respondent, the results presented in report D6 are somewhat contradictory and do not, therefore, allow to draw coherent conclusions therefrom as to the stain removal achievable in the presence or absence of a hydrophobic component:

More particularly, D6 reports on three dishwashing experiments, two of which (runs V2 and V3) were carried out by cleaning plastic tablets using a commercial product additionally comprising paraffin oil as a hydrophobic component, whereas in one experiment (run V1) the latter was omitted. The R_0 values (reflection of the individual **unstained** plastic tablets) vary noticeably (from 78,1 to 81,2), although the reflectance was measured after cleaning of the still unstained tablets in all three runs. Although having been subjected to an identical staining treatment, the reflectance of the stained plastic tablets (R_i) also shows noticeable differences (values from 72,9 to 77,1). Furthermore, the reflectance of the stained

plastic measured before and after a subsequent washing cycle using a commercial dishwashing cleaner (Somat 10 Tabs) together with paraffin oil as a hydrophobic component is in one case found to be increased (from 77,1 to 77,6) whereas it is found to be decreased (from 75,8 to 75,1) in the other case.

For the board, these findings cannot, therefore, call into question the test results reported in table I of the patent in suit.

Moreover, the board accepts that a skilled person encountering difficulties in trying to determine the degree of de-staining by reflectance measurements can rely on alternative methods available as, for instance, a simple "visual grading" as mentioned in D1 (page 19, line 50).

6. Obviousness

It remains to be assessed whether or not it was obvious for the skilled person in the light of the closest prior art as disclosed by D1 to arrive at the claimed invention, i.e. to provide the claimed use.

6.1 Document D1

6.1.1 The active ingredients used according to D1 in order to avoid staining of a plastic substrate and to enhance its destaining during the washing process are bleaching compounds selected from diacyl and tetraacyl peroxides.

6.1.2 D1 (see e.g. the compositions listed in example 1, paragraph [0187]) also mentions the possibility of including a hydrophobic component, in particular

paraffin(oil), into the detergent composition, but only for the purpose of corrosion inhibition (paragraph [0157]) or suds suppression (paragraphs [0160] and [0164]).

6.1.3 D1 neither discloses nor suggests that adding a hydrophobic component leads to the technical effect which is a feature of claim 1 at issue, i.e. enhanced stain removal. The question of whether or not an enhanced stain removal is inherently achieved when using the paraffin oil compositions in the context of the dishwashing processes disclosed in D1 is of no relevance in the analysis of what is made available to the public by this document (see G 0006/88, loc. cit., points 8.1 to 9 of the reasons).

6.2 Combination of documents D1 and D3

6.2.1 At the oral proceedings, the Appellant also relied on a combination of documents D1 and D3.

6.2.2 The board observes that D3 (see column 1, lines 37 to 40 and claim 1) deals with the problem of formulating a machine dishwashing detergent composition which maximises bleachable soil cleaning but minimises the occurrence of tarnishing of **silverware** components of the washload. The machine dishwashing detergent compositions according to D3 (see claim 1) mandatorily comprises a builder, a controlled amount of bleaching agent and an "anti-silver tarnishing mixture" containing a **paraffin oil** and a heavy metal ion sequestrant.

6.2.3 D3 is, however, silent as regards problems associated with coloured food stains on **plastic** components of the washload. For the board, D3 is thus neither a suitable

starting point for the assessment of inventive step, nor would the skilled person starting from the disclosure of D1 and trying to solve the stated technical problem have any reason to even consider the contents of this document, let alone to combine some of its teaching with the teaching of D1. Moreover, nothing in document D3 suggests that the mentioned paraffin oil component or some other hydrophobic component having a density required by present claim 1 could possibly contribute to overcoming problems associated with coloured food stains on plastic objects.

6.3 Consequently, in the board's judgement, none of the documents D1 and D3 relied upon by the appellant, taken alone or in combination with each other, suggests or points towards the use according to claim 1.

7. Hence, the subject-matter of claim 1 and, consequently, of claims 2 to 10 dependent thereon, involves an inventive step (Articles 52(1) and 56 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



L. Fernández Gómez

B. Czech

Decision electronically authenticated