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D E C I S I O N
of 9 August 2005

Case Number: T 0157/04 - 3.3.06

Application Number: 95940999.6

Publication Number: 0793439

IPC: A47L 15/44

Language of the proceedings: EN

Title of invention:

A method for warewashing without bleach

Patentee:

JohnsonDiversey, Inc.

Opponent:

HENKEL KGaA
Chemische Fabrik Dr. Weigert (GmbH & Co.)

Headword:

Amylase and pH (wash zone)/JOHNSONDIVERSEY

Relevant legal provisions:

EPC Art. 54, 56, 87

Keyword:

"Priority (not validly claimed)"
"Novelty (yes)"
"Inventive step (no)"

Decisions cited:

G 0002/98, T 0020/81

Catchword:

-



Case Number: T 0157/04 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 9 August 2005

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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 24 November 2003
revoking European patent No. 0793439 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Krasa
Members: G. Raths
U. Tronser

Summary of Facts and Submissions

I. This appeal is from the decision of the Opposition Division to revoke European patent No. 0 793 439 relating to a method for warewashing without bleach and granted on the European patent application 95 940 999.6 claiming priority of 24 November 1994 (GB9423234).

II. Claim 1 of the patent as granted reads:

"1. A method of warewashing in a multi-tank industrial or institutional machine comprising the steps of:
a) selecting a chemical cleaning system comprising at least two separate components for aqueous dissolution or dilution to respective use concentration in two separate zones of a warewashing machine, the first component comprising a cleaning agent and the second component comprising an enzyme, the system being substantially free of an added bleaching agent and a 1% aqueous solution of the first component being at least 1 pH unit more alkaline than a 1% aqueous solution of the second component;
b) introducing the first component into a washing zone to clean dirty dishware;
c) subsequently introducing the second component into a second washing zone to further clean the dishware; and
d) rinsing the dishware with an aqueous solution to substantially rinse away the chemical cleaning system."

III. Two oppositions were filed by the opponents (hereinafter respondents), both oppositions based on

the grounds of Article 100(a) EPC (lack of novelty and lack of inventive step; Articles 52(1), 54(1), (2) and 56 EPC) and referring, *inter alia*, to the following documents:

- (1) WO-A-94-27488,
- (3) DE-A-1 285 087,
- (4) GB 94 23 234, (priority application of the patent in suit)
- (5) Datenblatt "Topmatic Soft",
- (6) Datenblatt "Perzym",
- (7) Sicherheitsdatenblatt gemäß 91/155/EWG - ISO 11014-1 Einstufung und Kennzeichnung nach GefStoffV "Topmatic Soft",
- (8) Sicherheitsdatenblatt gemäß 91/155/EWG - ISO 11014-1 Einstufung und Kennzeichnung nach GefStoffV "Perzym",
- (9) Anwendungsblatt "Topmatic Soft und Perzym" and
- (13) EP-B-0 282 214.

IV. In its decision the Opposition Division held that

- the priority date of 24 November 1994 of the patent in suit was not validly claimed from document (4); therefore document (1) had to be considered as state of the art according to Article 54(1), (2) EPC;
- the subject-matter of the patent in suit was novel over documents (1) and (5) to (9), the dates of publication of documents (5), (6) and (9) not being unambiguously identifiable, and

- Claim 1 of the disputed patent as granted as well as according to the then pending auxiliary request lacked an inventive step in view of the teaching of document (1) (representing the closest prior art) in combination with document (13).
- V. An appeal was filed against this decision by the patent proprietor (hereinafter appellant).

In respect of the question whether the priority date of the patent in suit was validly claimed, the appellant argued that in the field of detergents a skilled person would infer from the priority document that the concentration of the cleaning agent (first component) in the use solution as well as the concentration of the enzyme (second component) in the use solution need not be expressly disclosed in the priority document; an expert in this field would know that these concentrations are 1 wt.-% aqueous solutions. This would also result from typical aqueous dissolution or dilution rates (dosing rates) for the component containing active agents (e.g. the first component comprising the cleaning agent) which are such that the weight of component per unit volume of water is in the range of from 1 to 5 g/l (document (4), page 3, paragraph 4; patent in suit, paragraph [0028]).

Also, the difference in pH by at least 1 pH unit between the solution containing the first component and that containing the second component needs not to be indicated in the priority document since this difference could be inferred from the priority document, in particular from the data of example 1.

Therefore document (1) should be considered under Article 54(3) EPC. Should document (1) however be considered under Article 54(2) EPC, and be taken as the starting point for evaluating inventive step under Article 56 EPC, then it would not render the claimed subject-matter obvious. Document (1) would only relate to an improved starch removal performance whereas the technical problem to be solved according to the patent in suit was to achieve an effective cleaning performance for both starch and tannin removal. There would be no hint in document (1) to remove simultaneously starch and tannin from dishware in an industrial warewashing machine. There would be no hint in document (1) to add the first component (cleaning agent) and the second component (enzyme) separately and sequentially into different washing zones of an industrial warewashing machine where a cascade flow of water occurs from one tank to another and wherein the cleaning operation is a continuous process which comprises only very short contact times with the active components (document (13), page 2, lines 42 to 52; page 3, lines 52 to 58) in order to optimize the cleaning results.

According to document (13) the use of a bleaching agent would be recommended (as opposed to the patent in suit) to remove tea-stain while products based on amylase can be used for starch removal only without alkalinity, i.e. at $\text{pH} \leq 7.0$ (whereas in the patent in suit the pH would be above 7).

Document (1) would teach to add both active materials i.e. cleaning agent and enzyme, parallel to each other into the same process step, whereas the patent in suit

would require a separate and sequential adding of the cleaning agent and the enzyme.

Further, according to the patent in suit an alkaline solution of the first component was used in the absence of any bleaching agent and further an alkaline solution of the second component was used, contrary to the teaching of document (13) which taught to use amylase for starch removal only in solutions having a $\text{pH} \leq 7.0$.

The technical solution of the underlying technical problem according to the patent in suit would be the use of two alkaline active material solutions free of any bleach whereby the alkaline solution of the first component (cleaning agent) was at least 1 pH unit more alkaline than the solution of the second component (enzyme).

The hint to document (3) in document (1) should be disregarded for assessing inventive step since document (3) would not deal with an industrial warewashing machine but with a household dishwashing machine.

Surprisingly an improvement of 52% in regard of the global cleaning performance (tea stain and starch removal) was achieved over the teaching according to document (13), and of 13% over the teaching according to document (1).

It would not be necessary to show that the technical effect was achievable over the whole range of the claimed methods. This would be an undue burden for the proprietor.

VI. The respondents contested the arguments of the appellant in writing and during oral proceedings before the Board held on 9 August 2005 and argued in particular,

- that the check of the validity of priority would request to assess whether the same invention was claimed in the priority document and in the patent in suit;
- that the date at which documents (5), (6) and (9) had been made available to the public could be identified from the numbers found on these data sheets.

VII. During oral proceedings before the Board the appellant submitted two new auxiliary requests and withdrew an earlier filed one.

VIII. Claim 1 of auxiliary request 1 differed from Claim 1 as granted in that

"the first component comprising a cleaning agent"

was replaced by

"the first component being selected from the group consisting of a caustic or strongly alkaline material, a detergency builder, a surfactant, and a mixture thereof,"

and

"1% aqueous solution of the first component being at least 1 pH unit more alkaline than a 1% aqueous solution of the first component being at least 1 pH more alkaline than a 1% aqueous solution of the second component"

was replaced by

"1% aqueous solution of the first component having a pH value of 9.5 to 13 and being at least 1 pH more alkaline than a 1% aqueous solution of the second component having a pH value of 8 to 9".

Claim 1 of auxiliary request 2 differed from Claim 1 of auxiliary request 1 in that "enzyme" was replaced by "amylase".

- IX. The appellant requested that the decision under appeal be set aside and the patent be maintained as granted (main request) or on the basis of claims 1 to 4 of auxiliary request 1 or claims 1 to 3 of auxiliary request 2, both auxiliary requests submitted during oral proceedings.

The respondents requested that the appeal be dismissed.

Reasons for the Decision

1. *Article 87 EPC*

- 1.1 An applicant for a European patent is only entitled to claim priority from an earlier filed application if the

European application is in respect of the same invention.

Article 88(4) EPC states that

"if certain elements of the invention for which priority is claimed do not appear among the claims formulated in the previous application, priority may nonetheless be granted, provided that the documents of the previous application as a whole specifically disclose such elements."

Concerning the right to priority in this case, the relevant basic question to be considered is whether there was a disclosure of all the claimed features of the invention in the priority document.

The feature at stake related to the pH difference in Claim 1 as granted.

1.2 According to Claim 1 as granted

"a 1% aqueous solution of the first component should be at least 1 pH unit more alkaline than a 1% aqueous solution of the second component".

1.3 The Board has to decide whether the feature relating to the difference of pH was disclosed in the corresponding priority document, i.e. document (4).

1.4 The appellant argued that this difference was not explicitly disclosed but could be inferred from the description and the data of example 1 of the priority document.

According to the appellant, an expert in the field of detergents would know that the use of an industrial dishwashing composition is normally a 1 wt.-% aqueous solution based on the active component i.e. the cleaning agent or the enzyme; the indication of these details would not to be required.

Respondent 1 contested this and pointed to the fact that a definition of the concentration of an industrial dishwashing composition was missing in the patent in suit.

No evidence as to what a skilled person would understand by "a use concentration" in this respect had been submitted.

For the Board, it does not result from Claim 1 of the patent in suit that the concentration of "a 1% aqueous solution of the first (or second) component" is necessarily identical to the use concentration in the first (or second) washing zone.

According to example 4, for instance, the pH of a 1 % aqueous solution of the cleaning component was adjusted to 9.8. The cleaning component was dosed into a wash zone in an amount of 2 g/l (page 4, paragraph [0063]), i.e. 0,2%.

The Board concludes

- that in absence of any clear definition in the specification, an industrial dishwashing

composition is not identical to a 1 wt % aqueous solution based on the active components and

- that a distinction has to be made between "a 1% aqueous solution of a component", in this decision called standard solution, and the concentration of the component in the washing liquor in a washing zone.

1.5 It has to be examined whether the person skilled in the art can derive the subject-matter of Claim 1 as granted directly and unambiguously, using common general knowledge, from document (4) as a whole (see G 2/98, reasons no. 2, last sentence and reasons no. 9, last sentence).

Regarding the concentrations of the cleaning agent and the enzyme, respectively, and the pH of the solutions containing the cleaning agent and the enzyme, respectively, the Board points to the requirement that the subject-matter of Claim 1 as granted defining the invention in the European patent in suit, i.e. the specific combination of features present in said claim, must at least implicitly be disclosed in the application whose priority is claimed i.e. document (4).

1. Cleaning agent

1.a The concentration range of the cleaning agent following its dissolution or dilution is such that the weight of the component per volume unit of water should be in the range of 1 to 5 g/l (priority document, page 3, paragraph 4; patent in suit, paragraph 28).

1.b The pH of the use solution containing the cleaning agent is from greater than 10 to 13 (priority document, page 3, paragraph 1). According to the patent in suit, "...the cleaning agent composition solution has a pH of 9,5 or greater, preferably of 9,5 to 13." (page 4, lines 22 and 23). The pH of the solution containing the cleaning agent (variant (i)) according to example 1 of the priority document is not disclosed, but would be greater than 10 according to sample 1 of example 1 of the patent in suit since the composition would be - according to the appellant - the same.

The Board observes that the composition according to the priority document (variant (i) of example 1) differs from that according to the patent in suit (sample 1 of example 1) in that the concentration of nitrilotriacetate (NTA) is 20% whereas it is 19% according to the priority document and the nonionic surfactant is sodium gluconate (priority document, variant (i), page 9), whereas the surfactant is not specified in the sample 1 of example 1 of the patent in suit.

2. Enzyme

2.a In regard of the enzyme concentration the appellant pointed to the passage of the priority document relating to the enzyme activity: "amylolytic enzymes...may have enzyme activities of from 2 to 25 Maltose units/milligram. They may be present in amounts such that the final composition has amylolytic enzyme activity of from 10^3 to 10^8 Maltose units/kilogram" (priority document, page 6, lines 29 to 32; patent in suit, paragraph 19); "proteolytic enzymes may be

present in amounts such that the final composition has a proteolytic enzyme activity of from 10^3 to 10^{10} glycine units per kilogram" (priority document, page 7, lines 22 to 26; patent in suit, paragraph 22).

2.b The pH of the enzyme solution used according to example 1 of the priority document would be the same as that according to example 2 of the patent in suit since Termamyl 300 L, an amylase, was used in an amount such that the activity was $2,2 \times 10^7$ units/kg (priority document) and 2×10^7 units /kg (patent in suit).

1.6 From the above data the appellant concluded that the priority document disclosed directly or implicitly

- that both active agent use solutions would be 1 wt.-% aqueous solutions (now called standard solutions);
- that both solutions would be free of a bleach agent;
- that the standard solutions would have pH units different from each other so that "a 1% aqueous solution of the first component being at least 1 pH unit more alkaline than a 1% aqueous solution of the second component".

1.7 The Board does not agree with the arguments of the appellant.

In the case under consideration, it has to be determined whether the following features are directly

and unambiguously derivable from the disclosure in the priority document:

a. the concentration of the standard solution comprising the cleaning agent (first component) and the enzyme (second component), respectively;

b. the pH difference of 1 pH unit between the two standard solutions i.e. that "a 1% aqueous solution of the first component being at least 1 pH unit more alkaline than a 1% aqueous solution of the second component."

The Board notes that the standard solutions of the first component (cleaning agent) and of the second component (enzyme) were not explicitly disclosed in the priority document.

This information is crucial since the standard solutions form the basis for the next criterion to be fulfilled namely the pH difference. In view of the lack of explicit disclosure, it has to be checked whether there is an implicit disclosure of the above mentioned features.

As to the cleaning agent, according to Claim 1 of the priority document "the aqueous solution resulting from dissolution or dilution to the use concentration of that component which contains the cleaning agent has a pH greater than 10."

In respect of the enzyme, according to example 1 of the priority document Termamyl 300L ex Novo (activity 22 MU/mg), an enzyme of the amylase type, was used in a

dose range of 0,05 to 0,3 g/l. The pH of the enzyme containing solution was however not disclosed. If the pH of the enzyme containing solution is missing, - in the Board's judgement - a skilled person would not understand that this pH is relevant for considering a pH difference in respect of the cleaning agent containing solution.

No evidence has been submitted by the appellant in that a skilled person would take in this case a standard solution. Also the range of 1 to 5 g/l for the cleaning agent or the range of 0,05 to 0,3 g/l for amylase to which the appellant referred are not appropriate to serve as a basis for disclosing a 1 % aqueous solution.

Therefore, an essential element, namely the definition of the standard solution which is an important information for arriving at the difference between the pH of this solution and that containing the cleaning agent is missing in the priority document.

Even if according to example 2 of the patent in suit the same amylase was used (as according to example 1 of the priority document) and the pH of 8.5 was explicitly disclosed in the patent in suit, this is not a sufficient reason for the skilled person, to focus on the pH difference between two standard solutions, the one comprising the cleaning agent, the other the enzyme.

Further, even if the skilled person would know that the pH difference is at stake, this does not imply that a skilled person would know the degree of difference to be taken into consideration, in other words, he would not infer that a 1% aqueous solution of the first

component (cleaning agent) should be at least 1 pH unit more alkaline than a 1% aqueous solution of the second component (enzyme).

- 1.8 The pH difference being an essential feature of the invention and being not directly and unambiguously derivable from the priority document, document (4) does not give rise to a right of priority (Article 87(1) EPC) and, consequently, document (1) is considered as state of the art under Article 54(2) EPC.

2. *Main request*

2.1 Article 54 EPC

The Board is satisfied that the claimed subject-matter is novel. Since the appeal fails for other reasons, there is no need to give further reasons.

2.2 Article 56 EPC

- 2.2.1 The Board finds it appropriate to point in particular to two features of the method as claimed:

The first feature relates to the order of treating dirty dishware, firstly, in a first washing zone with a first component (cleaning agent) and subsequently, in a second zone with a second component (enzyme, in particular amylase) and the second feature relates to the difference in pH of the aqueous solution of the first component and the second component.

The essence of the first feature is the separation of the cleaning agent from the enzyme, whereas the second feature

"a 1% aqueous solution of the first component being at least 1 pH unit more alkaline than a 1% aqueous solutions of the second component"

applies to the standard solutions of the starting materials and not to the pH of the washing solutions in the washing zones (see point 1.4).

2.2.2 The patent in suit relates to a method for warewashing, and this method concerns warewashing in industrial or institutional systems (as opposed to domestic automatic dishwashing machines as disclosed by document (3)).

According to the patent in suit there existed a need for a cleaning system that provides effective cleaning performance for both starch and tannin removal and which at the same time minimizes those negative interactions responsible for deactivation of the active ingredients within the system (page 2, lines 48 to 50). The technical problem to be solved can, thus, be defined as to find a method meeting such a need.

In the section relating to the discussion of the prior art, it is referred to the utility of enzymes for starch removal and, in this context, the problem of the detrimental effect of high alkalinity on enzymes is addressed (patent in suit, page 2, lines 48 to 50).

2.2.3 Document (1), as also accepted by the parties, is highly relevant for evaluating the inventive step of the claimed subject-matter since the detrimental effect of high alkalinity on enzymes and the removal of starch stain are an issue in both the patent in suit and document (1) (page 2, lines 20 to 22 and 29 to 31; page 3, lines 10 to 12), which also addresses the problem of enzyme degradation (page 15, lines 32 to 35). The Board, therefore, takes document (1) as the starting point for evaluating inventive step.

2.2.4 Whereas document (1) discloses the possibility to run the washing process in two separate zones, the subject-matter of Claim 1 of the main request differs from this method of warewashing in that the combination of this feature with the requirement of the pH difference is not directly and unambiguously derivable from document (1).

2.2.5 Example 5 of the patent in suit shows that sequential dosing of the cleaning agent and amylase (i.e. an enzyme) into two separate wash tanks gave significantly improved starch removal compared with the situation (representative for the prior art according to document (1)) where cleaning agent and amylase were dosed into the same wash tank (97% cleaning vs. 75 % cleaning after 10 soil/wash cycles). This is a proof that the above defined technical problem was credibly solved as regards the use of amylase as a second component.

Thus, it remains to be decided whether or not the claimed method involves an inventive step, in particular when amylase is used as a second component.

2.2.6 The cleaning system according to the patent in suit aims at minimizing the negative interactions responsible for deactivation of the active ingredients within the system (page 2, lines 9 and 50). Bleach agents have been removed from warewashing detergent compositions to minimize the deactivation of the enzyme ingredients (page 2, lines 40 to 41). The issue is whether there was a pointer in the prior art regarding the negative interaction between alkalinity and enzyme.

When discussing in document (1) the prior art represented by document (3), it was stated that the addition of a post washing agent comprising an enzyme in the main wash step is not possible because the alkalinity of the cleaning agent would destroy the enzymes (page 2, lines 20 to 22). In other words, document (1) via the reference to document (3), or document (3) itself (column 2, lines 6 to 9), contained a warning: The alkalinity of the wash solution containing the cleaning agent has a negative effect on the enzyme activity.

Document (3) thus gave the skilled person a hint to separate the cleaning agent from the enzyme. The appellant had argued that this document should be disregarded because it relates to a household dish washing machine and not to an industrial warewashing machine.

The Board cannot accept this argument. A skilled person looking for ways to remove starch from tableware would consider any information available to him in this respect, so also the hint to document (3) in document (1). The fact that document (3) concerned household

dishwashing machines would not have deterred him therefrom since the issue of enzyme sensitivity to alkalinity was independent from particular dishwashing machines.

The goal in document (3) was to remove starch which remained after the main washing step on the table ware. This problem was solved by adding into the post rinsing step a post rinsing agent containing an enzyme (column 1, lines 17 to 20). According to claim 3 of document (3) the enzyme should be amylase.

So, the skilled person was aware of amylase as an enzyme apt for starch removal as was its application separate from the cleaning agent.

As dosing in the cleaning agent and the enzyme sequentially i.e. separately was known, the invention concerns only the putting into practice what was known in the art, namely, the splitting of the washing area into two zones. Therefore, the addition of a cleaning agent in a first washing zone and amylase (i.e. an enzyme) in a second washing zone was obvious for a person skilled in the art for solving the existing technical problem.

- 2.2.7 The appellant had argued that the requirement of pH in the aqueous solution comprising the enzyme would be relevant since the warning regarding the negative interaction was due to the alkalinity caused by the cleaning agent system and since an enzyme has its optimum activity at a certain pH value which would be low in the case of amylase. Consequently it would be surprising to obtain good results at high pH.

This argument is not convincing since Claim 1, while containing a feature relating to a difference between the pH-values of the standard solutions referred to, does not require a specific pH value, in particular, no high pH value for these solutions. Moreover, it was also obvious for a person skilled in the art that the enzyme solution should be less alkaline than the solution of the cleaning agent, because high alkalinity implies low enzyme activity. It is precisely the avoidance of this high alkalinity which was taught by document (3) (by pointing to separating the wash solution containing the cleaning agent and the wash solution containing the enzyme).

2.2.8 In view of the above, the addition of amylase, i.e. an enzyme, as a second component separately from a cleaning agent into a wash zone different from that of the cleaning agent whereby a 1% aqueous solution of the first component is at least 1 pH unit more alkaline than a 1% aqueous solutions of the second component does not involve an inventive step.

2.2.9 The appellant had argued during the oral proceedings that lipase and protease could also be used for the same purpose as amylase and would also show the effect of improved starch removal but that it would be an undue burden to the proprietor to show for each possible embodiment of Claim 1 of the main request that the alleged technical effect is obtained.

The Board does not agree. A given technical advantage should be achievable over the whole area claimed. In order to render them relevant for the problem

underlying the invention, and, hence, to the assessment of inventive step alleged advantages should be supported by sufficient evidence where comparison is made with highly pertinent prior art (see T 20/81).

Further, the Board takes into consideration that according to document (1) lipase and protease are both used as a cleaning agent improver instead of amylase (page 22, lines 2 to 3).

Since amylase was known as being apt for starch removal from document (3) (see claim 3), the use of enzymes in general including protease and lipase, for which starch removal was not shown but only alleged, was obvious.

2.2.10 The subject-matter of Claim 1 of the main request does not meet the requirements of Article 56 EPC.

2.3 Auxiliary request 1

2.3.1 Claim 1

Claim 1 of auxiliary request 1 specified the first component and the pH range of the solutions containing the two components (see points II and VIII).

Regarding the feature concerning the first component, the corresponding passage of Claim 1 of auxiliary request 1 reads:

"the first component being selected from the group consisting of a caustic or strongly alkaline material, a detergency builder, a surfactant, and a mixture thereof,".

Regarding the feature concerning the pH, the corresponding passage of Claim 1 of auxiliary request 1 reads:

"a 1% aqueous solution of the first component having a pH value of 9.5 to 13 and being at least 1 pH more alkaline than a 1% aqueous solution of the second component having a pH value of 8 to 9".

2.3.2 Articles 54, 84 and 123 EPC

The Board is satisfied that Claim 1 of auxiliary request 1 meets the requirements of Articles 84 and 123 EPC as well as of Article 54 EPC. Since this request fails for other reasons there is no need to give further details.

2.3.3 Article 56 EPC

Claim 1 of auxiliary request 1 being directed to an enzyme in general, the reasoning under points 2.2.1 to 2.2.9 applies *mutatis mutandis* to the present request.

Claim 1 of auxiliary request 1 differs, in essence, from Claim 1 of the main request (i.e. as granted) in the feature

"a 1% aqueous solution of the first component having a pH value of 9.5 to 13 and being at least 1 pH more alkaline than a 1% aqueous solution of the second component having a pH value of 8 to 9"

(see point VIII).

It has to be decided whether this feature contributes to inventive step.

(a) As the Board already noted (see point 1.4), the pH requirement concerns the standard aqueous solutions of the starting material, i.e. the 1% aqueous solution comprising the enzyme. The activity of the enzyme has however to be considered in the washing zone. It would not be logical to separate the enzyme from the cleaning agent for the very reason that the high alkalinity of the cleaning agent system is detrimental to the enzyme stability and then bring the enzyme into presence of a high pH in the washing zone. Therefore, the "pH differential between the washing zones into which the cleaning agent and the enzyme components are dosed" according to example 4 of the patent in suit (page 7, lines 42 to 43) is logical, as well as the low residual amylase activity at pH 10 (compared to pH 8.5) in example 3 and in example 2 of the patent in suit.

(b) The Board notes the lack of indication of the pH in the washing zone in the description (and in Claim 1 which mentions only the pH of the standard solution) of the patent in suit, in particular in the zone in which the enzyme is dosed in.

(c) The indication of "a 1% aqueous solution of the first component having a pH value of 9.5 to 13 and being at least 1 pH more alkaline than a 1% aqueous solution of the second component having a pH value of 8 to 9" does not refer to the actual pH in the washing zone and does not allow any conclusion in respect to a technical effect linked to this pH-parameter.

Therefore this pH-parameter cannot contribute to an inventive step.

The subject matter of Claim 1 of auxiliary request 1 does not involve an inventive step (Article 56 EPC).

2.4 Auxiliary request 2

Claim 1 of auxiliary request 2 differed from Claim 1 of auxiliary request 1 only in that "enzyme" was replaced by "amylase" (see points II and VIII).

However the reasoning under points 2.2.1 to 2.2.9 and 2.3.3 refers to amylase as an enzyme and, therefore, applies mutatis mutandis to the subject-matter of Claim 1 of auxiliary request 2.

Consequently, the subject-matter of Claim 1 lacks an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

P. Krasa