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**D E C I S I O N**  
of 3 May 1996

**Case Number:** T 0167/93 - 3.3.1

**Application Number:** 83200938.5

**Publication Number:** 0098021

**IPC:** C11D 3/39

**Language of the proceedings:** EN

**Title of invention:**  
Bleaching compositions

**Patentee:**  
THE PROCTER & GAMBLE COMPANY

**Opponent:**  
Unilever PLC / Unilever N.V.

**Headword:**  
Bleaching agents/PROCTER & GAMBLE

**Relevant legal provisions:**  
EPC Art. 54, 56, 111(2), 113(1), 125

**Keyword:**  
"Res judicata (no) - decision of a Board of Appeal in examining proceedings up to grant not binding for Opposition Division"  
"Novelty (main request, no)"  
"Closest prior art"  
"Inventive step (auxiliary request, yes) - non-obvious alternative"

**Decisions cited:**  
G 0005/83; T 0007/86; T 0298/87; T 0332/87; T 0269/87;  
T 0666/89; T 0690/91; T 0843/91; T 0934/91; T 0133/92;  
T 0386/94

**Headnote:**  
A decision of a Board of Appeal on appeal from an Examining Division has no binding effect in subsequent opposition proceedings or on appeal therefrom, having regard both to the EPC and 'res judicata' principle(s).



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Chambres de recours

Case Number: T 0167/93 - 3.3.1

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.1  
of 3 May 1996

**Appellant:**  
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**Representative:** Ford, Michael Frederick  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted on 23 December 1992  
revoking European patent No. 0 098 021 pursuant  
to Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** A. J. Nuss  
**Members:** J. M. Jonk  
S. C. Perryman

### Summary of Facts and Submissions

I. The Appellant (proprietor of the patent) lodged an appeal against the decision of the Opposition Division by which European patent No. 0 098 021 was revoked in response to an opposition, based on Article 100(a) EPC, which had been filed against the patent as a whole.

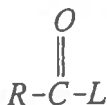
II. The opposition was supported by several documents including:

- (1) GB-A-839 715,
- (2) GB-A-836 988,
- (3) GB-A-864 798, and
- (9) EP-A-0 043 173.

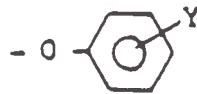
III. The decision was based on Claims 1 to 6 of the patent as granted (main request), Claim 1 reading as follows:

"A laundry detergent composition for use in domestic automatic washing machines comprising:

- (a) from 1% to 30% by weight of the composition of a surfactant selected from anionic, nonionic and cationic classes and compatible mixtures thereof;
- (b) from 1% to 60% by weight of a peroxygen bleaching compound capable of yielding hydrogen peroxide in an aqueous solution; and
- (c) from 0.5% to 40% by weight of a bleach activator having the general formula:



wherein R is an alkyl group containing from 5 to 18 carbon atoms wherein the longest linear carbon chain extending from and including the carbonyl carbon contains from 6 to 10 carbon atoms and L is a leaving group, the conjugate acid of which has a  $pK_a$  in the range of from 6 to 13, the leaving group L having the formula



wherein Y is  $-\text{SO}_3^-\text{M}^+$  or  $-\text{COO}^-\text{M}^+$  and M is a cation which provides solubility to the bleach activator, preferably sodium, potassium or mixtures thereof;  
wherein the molar ratio of hydrogen peroxide yielded by (b) to bleach activator (c) is greater than 1.5."

and on Claims 1 to 6 filed on 8 December 1992 according to the then standing auxiliary request, Claim 1 corresponding to Claim 1 of the patent as granted, except that feature (a) was defined as:

"from 1% to 30% by weight of the composition of a surfactant of a nonionic class and, optionally, a surfactant selected from cationic and anionic classes, and compatible mixtures thereof, and".

IV. The Opposition Division held that the subject-matter of Claim 1 as granted lacked novelty and that of the claims of the auxiliary request did not involve an inventive step in the light of the document (3).

Although in the decision T 298/87 - setting aside the decision of the Examining Division refusing the present patent application on the ground of lack of inventive step in respect of the claims then on file - the combination of the specific molar ratio of hydrogen

peroxide yielded by the bleaching compound to the bleach activator and the specific bleach activators was considered to constitute a selection from the broader scope of document (3), the Opposition Division concluded that the claimed subject-matter lacked novelty in line with the decision T 666/89, since it originated from the combination of preferred features indicated in the description of document (3), so that it could not be spoken of "hidden matter".

The Opposition Division also held that the subject-matter of Claim 1 of the auxiliary request relating to bleaching compositions containing a nonionic surfactant as a compulsory component lacked inventive step, since - starting from Document (3) as the closest prior art - the provision of alternative compositions comprising nonionic surfactants optionally in mixture with anionic and/or cationic surfactants did not involve any inventive activity.

V. Oral proceedings were held on 3 May 1996.

VI. The Appellant argued in view of the decision T 298/87 of another Board of Appeal, setting aside the decision of the Examining Division refusing the present patent application, in which the then deciding Board concluded that neither of the documents considered (i.e. the present documents (3) and (9)), taken alone or in combination, had been shown to lead in an obvious manner to the subject-matter claimed especially as regards the "molar ratio" greater than 1.5 in association with the selected bleach activators, that the issues considered by the Opposition Division on which their decision was based were res judicata. In support of this view he referred to the decisions T 934/91 and T 843/91.

The Appellant also argued that the subject-matter of Claim 1 of the disputed patent was novel in view of document (3), since the selection of the appropriate combination of the specific molar ratios of hydrogen peroxide yielded by the bleaching compound to the bleach activator and the specific bleach activators conferred novelty to the claim. In this context, he emphasised that according to document (3), particularly in view of the examples, a molar ratio of about 1 : 1 was optimal and sodium p-acetoxybenzene sulphonate, i.e. a compound falling outside the scope of the claimed invention, was the preferred activator. Furthermore, he observed that document (3) indicated that the proportion of persalt and ester in a detergent would depend upon the conditions of the use, the individual materials involved, and the degree of bleaching and washing required, so that it was not unambiguously clear that the ratio of about 1 : 1 applied in the Examples 9 and 10 could be replaced by each ratio falling within the disclosed range of 1 : 4 to 4 : 1 molecules of activator to each atom of available oxygen. Moreover, he argued that the facts and reasoning in the decisions T 666/89 and T 332/87 were not relevant to the present case. However, he did not see any difference in essence between the present case and the case of T 7/86 concerning a "combination selection", i.e. a combination of variants selected from at least two variable groups.

In addition, the Appellant submitted that the subject-matter of Claim 1 as granted also involved an inventive step. He contended that having regard to the closest state of the art, namely document (9), the object of the claimed invention was the provision of bleaching compositions providing an enhanced surface bleaching of textiles, sometimes referred to as "dingy fabric clean up". To solve this problem it was found that it was necessary to use certain bleach activators of the class

of carboxylic esters, which were characterised mainly by the length and structure of their alkyl chain, and also to use these bleach activators in specific ratios to the hydrogen peroxide yielded. Documents (1), (2) and (3) did not render this solution obvious to the skilled person, since they did not relate to the technical problem to be solved. He observed that document (3) concerned with improving the storage stability of bleaching compositions, i.e. with a totally unrelated problem, which was solved by using certain esters of aliphatic carboxylic acids having particular particle sizes as activators.

Furthermore, during the oral proceedings, the Appellant filed new Claims 1 to 6 as an auxiliary request, Claim 1 corresponding to Claim 1 of the patent as granted, except that feature (a) was defined as:

"from 1% to 30% by weight of the composition of a surfactant wherein the surfactant is of a nonionic class and, optionally, a surfactant selected from cationic and anionic classes, and compatible mixtures thereof, and".

Regarding this request, he submitted that the subject-matter of Claim 1 was novel since it comprised a nonionic surfactant as a compulsory component and also involved an inventive step for the same reasons as indicated for the main request.

VII. The Respondents disputed that the issues considered by the Opposition Division would be res judicata. In their view an Opposition Division was entitled to disagree with a Board's decision in examining proceedings. Moreover, res judicata could only apply in cases involving the same parties.

Furthermore, the Respondents fully agreed with the reasoning of the Opposition Division regarding lack of novelty for the main request and lack of inventive step for the auxiliary request.

They disputed that the facts and reasoning in the decisions T 666/89 and T 332/87 leading to lack of novelty were different. In the light of the decision T 666/89 they could not see any way in which the combination of Examples 9 or 10 of document (3) together with a passage of its general disclosure could be regarded as outside the total information content of document (3).

Concerning the issue of inventive step, the Respondents contended that the Opposition Division was right in considering document (3) as the closest state of the art, since this document concerned bleaching detergent compositions and suggested the application of bleach activators and ratios of persalt to bleach activator in accordance with the claimed invention. In addition, they argued that examining of inventive step starting from document (9) as the closest state of the art instead of document (3), also would lead to lack of inventive step. The prior art according to document (9), particularly having regard to Example VI, differed from the claimed subject-matter only in that alternative activators were used. However, in view of the indication in document (9) that the improvement of the bleaching of dingy fabrics appeared to be due to the relatively long alkyl chains of the activators implying that the leaving groups of the activators were considered to be less relevant for achieving this effect, a skilled person faced with the problem to provide alternative activators being suitable for bleaching dingy fabrics would have had a clear incentive to its solution in documents (1) to (3).



VIII. The Appellant requested that the decision under appeal be set aside and that the patent be maintained as main request on the basis of the claims as granted, and as auxiliary request on the basis of the set of claims submitted as auxiliary request at the oral proceedings on 3 May 1996.

The Respondents requested that the appeal be dismissed.

IX. At the conclusion of the oral proceedings the Board's decision to allow the Appellant's auxiliary request was pronounced.

### Reasons for the Decision

1. The appeal is admissible.
2. The first issue to be dealt with is the Appellant's submission on res judicata. The Appellant was arguing that the Opposition Division was bound by the ratio decidendi of the remitting decision T 298/87 of the Board of Appeal, setting aside the decision of the Examining Division refusing the present patent application on the ground of lack of inventive step in view of document (3). In the Appellant's view, this also meant that all findings of facts from document (3) on which the binding part of the decision rested, were not open to reconsideration and thus equally binding.
  - 2.1 This issue requires a preliminary investigation of whether there is any legal basis under the European Patent Convention for such a binding effect.

The only explicit reference to any binding effect of a decision of a Board of Appeal (other than the Enlarged Board) is in Article 111(2) EPC stating:

"If the Board of Appeal remits the case for further prosecution to the department whose decision was **appealed, that department shall be bound** by the ratio decidendi of the Board of Appeal, in so far as the facts are the same. If the decision which was appealed emanated from the Receiving Section, the Examining Division shall similarly be bound by the ratio decidendi of the Board of Appeal."

(Emphasis by the Board)

- 2.2 There is no reference here to an Opposition Division being bound by a decision of a Board of Appeal on appeal from an Examining Division. The basis, if any, for such binding effect could thus only be under Article 125 EPC stating

"In the absence of procedural provisions in this Convention, the European Patent Office shall take into account the principles of procedural law generally recognised in the Contracting States",

or some principle developed by interpretation of the European Patent Convention.

- 2.3 To discover principles of procedural law generally recognised in the Contracting States it is useful first to turn to maxims of Roman Law, as these have proved themselves in practice over many centuries, have fundamentally influenced the laws of all Contracting States, and survive, though possibly in slightly modified form, in these laws today.

In this case, where the Appellant has referred to a principle of **res judicata** to support his argument, relevant maxims are:

- (1) **Res inter alios judicata alii non praejudicat.**  
(Dig, 2, 7, §2 in Corpus iuris civilis, editio stereotypa, Bd. 1, Berlin 1908)

A matter adjudged between others does not prejudice third parties.

- (2) **Res judicata pro veritate accipitur.**  
(Digest 1, 5, 25 in Op. cit.)

The adjudged matter is to be accepted as truth.

- (3) **Res judicatas restaurari exemplo grave est.**  
(Codex Just. 7, 52, 4 in Corpus iuris civilis, editio stereotypa, Bd. 2, Berlin 1877)

To reopen adjudged matters is undesirable because of the [bad] example set.

- (4) **Expedit rei publicae, ut finis sit litium.**  
(Cod. Just. 7, 52, 2 (Caracalla); 2, 4, 10 (Philipp); 3, 1, 16 (Justinian) in Corpus iuris civilis, editio stereotypa, Bd. 1, Berlin 1908)

It is in the public interest that there be an end to litigation.

The principle of **res judicata** is thus a compromise between **the right of all parties to a fair hearing** (maxim (1)), and a **desire to bring litigation to a speedy end** (maxims (2) to (4)).

2.4 This is also accepted under the national laws of at least certain Contracting States as set out below:

2.4.1 For the purpose of English law it is useful to quote the following definitions taken from Halsbury's Laws of England, Fourth Edition Reissue 1992, Volume 16:

"There is said to be an **estoppel** where a party is not allowed to say that a certain statement of fact is untrue, whether in reality it is true or not. Estoppel may therefore be defined as a disability whereby a party is precluded from alleging or proving in legal proceedings that a fact is otherwise than it has been made to appear by the matter giving rise to that disability." (§ 951)

"**Estoppel per rem judicatam** arises:

- (1) where an issue of fact has been judicially determined in a final manner between the parties by a tribunal having jurisdiction, concurrent or exclusive in the matter, and the same issue comes directly in question in subsequent proceedings between the same parties (this is sometimes known as cause of action estoppel);
- (2) where the first determination was by a court having exclusive jurisdiction, and the same issue comes incidentally in question in subsequent proceedings between the same parties (this is sometimes known as issue estoppel)" (§ 953)

2.4.2 For French law, the Code Civil Art. 1351 states:

"L'autorité de la chose jugée n'a lieu qu'à l'égard de ce qui a fait l'objet du jugement. Il faut que la chose demandée soit fondée sur la même cause; que la demande soit entre les mêmes parties, et formée par elles et contre elles en la même qualité."

The binding effect of the adjudged matter only exists for what was the object of the judgement. It is necessary that the relief sought is based on the same cause of action; that the suit is between the same parties, and for and against them in the same legal capacity.

2.4.3 In respect of German law § 325 Zivilprozeßordnung (Rechtskraft und Rechtsnachfolge) states that:

"Das rechtskräftige Urteil wirkt für und gegen die Parteien und die Personen, die nach dem Eintritt der Rechtshängigkeit Rechtsnachfolger der Parteien geworden sind oder den Besitz der in Streit befangenen Sache in solcher Weise erlangt haben, daß eine der Parteien oder ihr Rechtsnachfolger mittelbarer Besitzer geworden ist."

A legally binding judgement has force for and against the parties and persons, who after the start of litigation became successors of the parties or obtained possession of the thing in dispute in such a manner, that one of the parties or its successors has become the mediate owner.

2.5 Without needing to consider the laws of the Contracting States in more detail, in the Board's judgment, it can be seen from the above that any generally recognized principle of estoppel by rem judicatam for the Contracting States is of extremely narrow scope as it will involve something that has been:

- (a) judicially determined
- (b) in a final manner
- (c) by a tribunal of competent jurisdiction,
- (d) where the issues of fact are the same,
- (e) the parties (or their successors in title) are the same, and
- (f) the legal capacities of the parties are the same.

2.6 In cases T 843/91 (OJ EPO 1994, 832) and T 934/91 (OJ EPO 1994, 184) relied on by the Appellant, all criteria (a) to (f) were met, as the proceedings in both cases involved a second appeal in the same opposition proceedings. Here, however at least criterion (e) is not met, as the Respondent was not a party to the application proceedings in which decision T 298/87 issued.

2.7 As stated above, the principle of res judicata is based on public policy that there should be an end to litigation. But the European Patent Convention specifically provides that the grant of a patent should be considered both at a first examination stage (Articles 96 and 97) and at an opposition stage (Articles 99 to 102), and Article 113(1) EPC provides that "The decisions of the European Patent Office may only be based on grounds or evidence on which the parties concerned have had an opportunity to present their comments". In the Board's view these explicit provisions of the Convention preclude any implicit public policy preventing a matter being considered a second time in judicial proceedings, that is estoppel

per rem judicatam, from being applicable. Further, to consider in opposition proceedings whether certain lines of argument are precluded on some principle of res judicata, would itself be an undue complication. As a party in opposition proceedings is free to adopt as its own argument the reasons given in a decision of a Board of Appeal in ex parte proceedings, it is this Board's view that the aim of speedy proceedings is best served, if all the issues in opposition proceedings are decided by the relevant tribunal on its own view of the facts, free from res judicata considerations relating to decisions made during the examination proceedings.

2.8 It should be stated that until the beginning of 1996, it was the generally accepted view that Boards of Appeal are not in inter partes proceedings bound by decisions in ex parte proceedings (see, for example, the categorical statement to this effect in the commentary on the basis of German and European jurisprudence, Schulte, "Patentgesetz mit EPÜ, 5. Auflage" (Carl Heymanns Verlag KG 1994), last sentence on page 710). This could have been justified as consistent with the above criteria for res judicata not only on the basis of criterion (e), but also on criterion (c) since an examining division has no jurisdiction to decide an inter partes case, its decision could not bind the opposition division.

2.9 However in decision T 386/94 of 11 January 1996 (to be published in the OJ EPO), it has been said by Board 3.3.4 that a document may not be taken into account when assessing novelty under Article 54(3)(4) EPC (in circumstances where this document was an application in the name of an opponent, who was arguing that it was entitled to its priority and therefore destroyed the novelty of the opposed patent) because in two earlier appeal proceedings on the opponent's application firstly Board 3.3.2 had decided (T 269/87 of 24 January

1989 (not published in the OJ EPO)) that the application was not entitled to such priority and secondly Board 3.3.4 in decision T 690/91 of 10 January 1996 (not published in the OJ EPO) had reached the conclusion that the findings of T 269/87 with regard to priority were **res judicata** and not amenable to being re-investigated.

2.9.1 It is worth observing that the patent under consideration in T 386/94 was in fact revoked for lack of inventive step over other prior art, so the part of this decision (points 19, 21 and 22) stating that this opponent was precluded by earlier decisions from relying on his own application to destroy novelty of the opposed patent, was not necessary to support the order made.

2.9.2 There is no discussion in decision T 386/94 of why the matter is *res judicata* in the opposition proceedings, or whether the change in capacity from applicant to opponent might not require that the merits of the argument be looked at afresh. Other opponents could have raised the same argument, so it is not clear why in the public interest the allegation should not be considered on its merits. Further, while on the facts of T 386/94 the opponent had at least been heard in some proceedings, this Board would not agree that this is sufficient to invoke the principle of *res judicata* to preclude an opponent raising a particular issue which he has lost in the capacity of applicant in different proceedings.

2.10 Thus, this Board can see no basis for *res judicata* in the present case, either under the wording of Article 111 or 125 EPC, or on the basis of any interpretation of the European Patent Convention.



2.11 This is a situation where in accordance with the Enlarged Board Decision G 5/83 (OJ EPO 1985, 64, point 5), it is legitimate to take into account the preparatory documents and the circumstances of the conclusion of the treaty in order to confirm the meaning that the Board believes correct.

2.11.1 The penultimate version of what is now Article 111(2) EPC read:

"All further decisions on the same application or patent involving the same facts shall be based on the ratio decidendi of the Board of Appeal" (see document BR/184 e/72 of the Historical documentation relating to the European Patent Convention).

2.11.2 The reason for the change from that version to the present one appears from document BR/209 e/72 zat/QU/K of the Historical documentation relating to the European Patent Convention. This shows that it resulted from a joint proposal of the German, British, French and Dutch delegations, in which the committee agreed basically with their suggestion to avoid having a decision of a Board of Appeal from being binding on the Opposition Division or the courts of the individual states or the revocation divisions of the second convention. The committee however approved a change to make clear that the department to which the matter is remitted is bound by the ratio decidendi in so far as the facts are the same.

2.11.3 The Board thus concludes that a decision of a Board of Appeal on appeal from an Examining Division has no binding effect in subsequent Opposition proceedings or on appeal therefrom, having regard both to the European Patent Convention and 'res judicata' principle(s).

2.12 The question of the circumstances, if any, in which the principle of res judicata can be relied on to achieve a binding effect of an Appeal Board Decision going beyond that specifically provided for by Article 111(2) EPC is one which may at some time have to be considered by the Enlarged Board. However in decision T 298/87, on which the res judicata argument of the appellant is based and which was a decision on appeal from the Examining Division, while the Board concerned had admittedly considered that inventive step was established for the Claim 1 before it, it also considered that feature (a) of this Claim 1, introduced during the examination procedure to remove an objection of lack of novelty, and which had been accepted without comment by the Examining Division, did not seem, on closer review, to meet the formal requirements of in Article 123(2) EPC. As that Board was unable to trace any explicit disclosure of feature (a) in the originally filed documents, it found it necessary to remit the matter to the Examining Division for a full examination of the matter of the amended claims, especially as regards Article 123 EPC, on which the decision of the Examining Division then under appeal was completely silent. The Examining Division on the referral then found these claims unallowable under Article 123(2) EPC, but granted the patent on the basis of a different set of claims. The claims considered by the Board of Appeal in T 298/87 thus differed significantly from the claims before the Opposition Division, and now before this Board, so that on any view of the law no estoppel arises, and an independent consideration of novelty and inventive step is necessary. In these circumstances, this Board does not consider that a referral to the Enlarged Board relating to an issue of estoppel by rem judicatum is necessary in the present case.

2.13 The Board accordingly holds that the Respondent's arguments on all issues must be decided anew on the facts as determined.

3. *Main request*

3.1 The first substantive issue to be dealt with is whether the subject-matter of the claims of the patent in suit as granted is novel in view of the novelty objections indicated above under points IV and VII.

3.1.1 Having regard to the argumentation of the Appellant in respect of the novelty of the claimed subject-matter set out under point VI above, the Board emphasises that, in accordance with the established jurisprudence of the Boards of Appeal in deciding novelty of a claimed invention, consideration has not only to be given to the examples of a prior art document but also to whether the disclosure of such a document as a whole is such as to make available to the skilled person the subject-matter for which protection is sought. This means, that the technical teaching of examples of a patent document may be combined with technical information disclosed in its description, provided that the examples concerned are representative for the general technical teaching of this document (see, for instance, T 332/87 (not published in the OJ EPO), particularly under point 2.2).

Moreover, the Boards of Appeal considered that "selection novelty" was no different from any other type of novelty under Articles 52 and 54 EPC, and that conceptual tools to consider availability, such as difficulties of carrying out prior art teaching in a range of overlap or of seriously contemplating applying a technical teaching within the range of overlap, were helpful tools in deciding "selection novelty" (cf. T 666/89 referred to above, and T 133/92 (not published

in the OJ), particularly under points 2.1.2 and 2.1.4 of the reasons). In this context, the Boards of Appeal also consistently emphasised that a sub-range singled out of a larger range is new not by virtue of a newly discovered effect occurring within it, but must be new per se, and that an effect of this kind only permits the inference that the selected sub-range is not an arbitrarily chosen specimen from the prior art.

3.1.2 In the present case, the prior art document (3) describes detergent bleaching compositions comprising from 10 to 50% by weight of organic detergent, from 1 to 15% of a persalt, and from 2 to 30% of a bleach activator (cf. page 3, lines 8 to 17). The bleach activator is a solid reactive organic ester preferably derived from an aliphatic carboxylic acid having not more than 10 carbon atoms and a phenol sulphonate (cf. page 2, lines 9 to 34). Particularly preferred bleach activators are p-acetoxy-, p-butyroxy-, p-caproxy, and p-capryloxybenzene sulphonate (cf. page 2, lines 30 to 42, and the examples).

Furthermore, the Examples 9 and 10 of document (3), which are, in the Board's judgment, clearly in line with the general teaching of this document, describe compositions comprising the caproic ester of sodium p-hydroxybenzene sulphonate and the corresponding caprylic ester, respectively. These compositions - undisputed by the parties - differ from those as claimed in present Claim 1 of the patent in suit only in that the "molar ratio" of the available oxygen in the persalt to the bleach activator according to these example is about 1 : 1, whereas this ratio according to the claimed invention is to be greater than 1.5.

However, document (3) also teaches in its specification that the bleaching compositions contain preferably a proportion of from 1/4 to 4, more preferably of from 1/2 to 3/2, of bleach activator to each atom of available oxygen in the persalt present (cf. page 2, lines 100 to 104). Thus, both ranges corresponding to a preferred range of ratios of the available oxygen in the persalt to the activator of from 1 : 4 to 4 : 1, and a more preferred one of from 2 : 3 to 2 : 1, overlap with the range of the molar ratios of hydrogen peroxide yielded by the peroxygen bleaching compound to the bleach activator greater than 1.5 as claimed in the patent in suit.

Moreover, having regard to the teaching of document (3) that the invention disclosed therein is of particular value in relation to the esters of acetic acid (cf. page 2, lines 21 to 26), but that the corresponding butyrate, caproate and caprylate can be used **instead of** the acetoxy compound (cf. page 2, lines 38 to 42), a skilled person would derive from this document that all the esters (bleach activators) specified therein have substantially equivalent properties. Therefore, document (3), in the Boards view, clearly teaches that **all the specified activators** are equally suitable for use with ratios of the available oxygen in the persalt to the activator falling within the range of from 1 : 4 to 4 : 1, or more preferred in the range of from 2 : 3 to 2 : 1, disclosing thus ratios **greater than 1.5 : 1** as claimed in the patent in suit. In this context, it is the Board's position that a skilled person would have interpreted the statement in document (3) that "the proportion of persalt and ester in a detergent will depend upon the conditions of the use, the individual materials involved, and the degree of bleaching and washing required" (cf. page 3, lines 5 to 8), in the light of the disclosure of this document as

a whole, in the sense that the precise ratio which is optimal will depend on the particular circumstances. Certainly for the whole most preferred range the skilled man might pick on any value while considering himself to be following the precise teaching of this document. The patent in suit recognizes that a broad range of values will be suitable.

3.1.3 Therefore, the Board concludes that the disclosure of document (3) as a whole makes available to the skilled person a bleaching detergent composition falling within the scope of Claim 1 of the main request.

3.1.4 The Appellant's submission that there would be no difference between the present case and that of the decision T 7/86 cannot be accepted by the Board. In the present case, in which document (3) - as indicated above - clearly teaches that all the activators have substantially the same properties, the situation is such that each of the specified activators can be equally combined with variants of **one variable range**, i.e. the range of ratios of available oxygen to activator. However, such a case is not comparable with the case of the decision T 7/86, in which novelty of **individual compounds** could be acknowledged by considering that a class of compounds defined only by a general structural formula **having at least two variable groups** does not specifically disclose each of the individual compounds which would result from the **combination of all possible variants within such groups** (cf. point 5.1, last sentence of the last paragraph, of the reasons).

3.1.5 Thus, having regard to the considerations above, the main request fails for the reason of lack of novelty.

4. *Auxiliary request*

4.1 The subject-matter of Claim 1 of this request is based on Claim 1 as granted in combination with page 5, lines 26 and 27, of the patent in suit, and is also supported by Claims 1, 5, 6, 7 and 10 in combination with page 13, lines 14 to 17, of the patent application as originally filed.

Claims 2 to 6 of this request correspond to Claims 2 to 6 as granted, and are also supported by Claims 2, 3 and 8, page 11, lines 11 to 15 of the description, and Claim 11 of the originally filed patent application.

Thus, all claims of the new set of claims according to the auxiliary request comply with the requirements of Article 123 EPC. This was not contested by the Respondents.

4.2 After examination of the cited prior art, the Board has reached the conclusion that the subject-matter as defined in all claims of the auxiliary request is novel. Since the novelty of the subject-matter of these claims was not disputed by the Respondents, it is not necessary to give reasons for this finding.

4.3 This leaves the issue of whether the subject-matter of the present claims involves an inventive step.

4.3.1 Article 56 EPC sets forth that an invention involves an inventive step if, having regard to the state of the art (in the sense of Article 54(2) EPC), it is not obvious to a person skilled in the art.

For deciding whether or not a claimed invention meets this criterion, the Boards of Appeal consistently apply the "problem-solution-approach", which consists essentially in (a) identifying the "closest prior art",

(b) assessing the technical results (or effects) achieved by the claimed invention when compared with the "closest state of the art" established, (c) defining the technical problem to be solved as the object of the invention to achieve these results, and (d) examining whether or not a skilled person, having regard to the state of the art in the sense of Article 54(2) EPC, would have suggested the claimed technical features for obtaining the results achieved by the claimed invention.

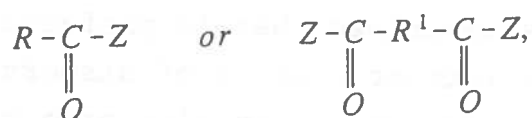
4.3.2 According to the established jurisprudence of the Boards of appeal the "**closest prior art**" for assessing inventive step is normally a prior art document disclosing subject-matter conceived **for the same purpose** as the claimed invention and having the most relevant technical features in common.

This disqualifies document (3) as the "closest state of the art", since - as submitted by the Appellant and indicated in the patent in suit (cf. page 2, first paragraph, and page 3, lines 15 to 48) - the claimed invention relates to the problem of providing bleaching detergent compositions showing an effective and efficient surface bleaching of textiles, sometimes referred to as "dingy fabric clean up" involving the removal of dingy soils that build up on textiles after numerous cycles of usage and washing, which type of bleaching differs from the so called "solution bleaching", whereas document (3) concerns a totally unrelated problem, namely, that of improving the storage stability of bleaching detergent compositions suitable for "solution bleaching", which was solved by using certain esters of aliphatic carboxylic acids having particular particle sizes as activators (cf. page 1, line 79 to page 2, line 16, and the examples).



4.3.3 In these circumstances, the Board considers that the compositions described in document (9) represent the closest state of the art. This document relates to bleaching detergent compositions capable of improving the bleaching of dingy fabrics comprising from 1 to 50%, preferably from 5 to 30%, by weight of an activated bleaching composition comprising from 1 to 70% by weight of a peroxygen bleaching compound capable of yielding hydrogen peroxide in aqueous solution and 1 to 90% by weight of a bleach activator, and from 1 to 50% by weight of a detergent surfactant, optionally combined with other components, such as builders and buffers, suitable for use in such bleaching detergent compositions (cf. page 15, lines 7 to 33, in combination with page 4, line 10 to page 5, line 12, Claim 10 in combination with Claim 1, and page 10, line 22 to page 11, line 2).

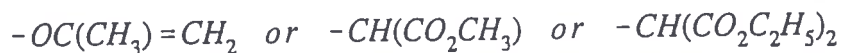
Suitable bleach activator compounds are compounds described on page 6, line 19 to page 7, line 11, having the formula



wherein **R** is a hydrocarbyl group containing from 5 to 13 C-atoms and additionally from 0 to 10 ethylene oxide groups, provided that when R contains more than 9 C-atoms it must contain at least 2 ethylene oxide groups, **R<sup>1</sup>** is a hydrocarbyl group containing from 4 to 24 carbon atoms and additionally from 0 to 10 ethylene oxide groups, provided that when R<sup>1</sup> contains more than 12 C-atoms it must contain at least 2 ethylene oxide groups, and **Z is a leaving group** having a pKa of from 5 to 20 and a molecular weight of less than 175, selected from

- (1) certain specified enols,
- (2) certain specified carbon acids, and
- (3) certain specified N-alkyl quaternary imidazoles.

The most preferred compounds having the formula  $R(C=O)Z$  are isopropenyl esters of  $C_6$ - $C_{10}$ -alkanoic acids, and dimethyl or diethyl esters of  $C_6$ - $C_{10}$ -alkanoyl malonic acid, i.e. compounds containing a **leaving group L** having the formula



(cf. page 8, line 31 to page 9, line 13).

The compositions according to this document contain the peroxygen compound and the bleach activator compound preferably in approximately equimolar ratios (cf. page 11, lines 14 to 20).

In addition, document (9) discloses that the compositions described therein preferably contain a detergent surfactant capable of dispersing and solubilising the long chain bleaching compound so that maximum contact between the activator and the hydrogen peroxide in the bleaching solution is obtained, and that in this respect particularly suitable surfactants are nonionic surfactants (cf. page 12, line 5 to page 13, line 22).

4.3.4 Regarding this prior art the Appellant argued that by using the compositions according to the claimed invention an improved dingy fabric clean up is achieved. He based this submission on the **theoretical considerations** as set out before the first instance, contending that the claimed invention relates to

**ionisable bleach activators** having a degree of surface activity and forming peroxy-carboxylic acid bleaches having also a surfactant character so that both tend to concentrate at interfaces, and that the employment of **high molar ratios of hydrogen peroxide to activator** minimises an attack on the carbonyl group of the activator by the peroxy-carboxylic anion, both species being concentrated at the interfaces, and thus the formation of undesired organic peroxide compounds.

However, the Respondents disputed the existence of such an improvement, and considered the problem to be solved according to the patent in suit as being the non-inventive provision of **alternative** activators which differed from those disclosed in document (9) only in that they contained different leaving groups.

In this situation, and having regard to the fact that document (9) discloses the use of ionisable activators, namely, those containing N-alkyl quaternary imidazoles as leaving groups and also the application of widely variable ratios of the peroxygen compounds to the activators (cf. page 7, lines 4 to 9, page 8, lines 9 to 11, and page 11, lines 14 to 27), the existence of the alleged improvement in respect of dingy fabric clean up as a result of the use of the specific activators and ratios as claimed has, in the board's judgment, not been made sufficiently plausible (cf. T219/83, OJ EPO 1986, 211 and 328).

Consequently, the advantage referred to by the Appellant cannot be taken into consideration in respect of the determination of the technical problem underlying the patent in suit and, therefore, the assessment of inventive step.

4.3.5 Therefore, in the light of this closest state of the art, the underlying problem can only be seen in the provision of further bleaching detergent compositions on the basis of nonionic surfactants, peroxygen bleaching compounds, and bleach activators having a comparable dingy fabric clean up performance.

According to present Claim 1 this technical problem is solved by compositions of the above type containing essentially a peroxygen bleaching compound capable of yielding hydrogen peroxide in an aqueous solution, and a particular bleach activator as defined therein, wherein the molar ratio of hydrogen peroxide yielded by the peroxygen bleaching compound to the bleach activator is greater than 1.5.

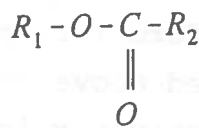
4.3.6 Having regard to the description of the patent in suit indicating that to ensure that the singlet oxygen is more efficiently evolved at the **textile surface**, it is essential that **the longest linear carbon atom chain** extending from and including the carbonyl carbon of the peroxy-carboxylic acid has **from 6 to 10 carbon atoms**, and that **the molar ratio of hydrogen peroxide yielded by the peroxygen bleaching compound to the bleach activator is critical to obtaining the desired level of surface bleaching performance** (cf. page 3, lines 40 to 48 and 54 to 65), as well as **in view of Example IV** showing that bleaching compositions containing a molar ratio of hydrogen peroxide yielded by sodium perborate to sodium linear octanoyloxybenzene sulphonate of greater than 1.5, provide significantly more dingy fabric clean up than bleaching compositions with such a molar ratio of 1.5 or less, the Board considers it

plausible that the technical problem as defined above has been solved. Actually, the Respondents did not contest that the compositions according to the claimed invention show a satisfying dingy fabric clean up performance.

4.3.7 The question now is whether the cited prior art would have suggested to a person skilled in the art solving the above-indicated technical problem in the proposed way.

4.3.8 Although document (9) - like the claimed subject-matter of the patent in suit - relates to bleaching detergent compositions capable of bleaching dingy fabrics, it is clear from the preceding considerations (see under point 4.3.3 above) that this document, disclosing the use of **different specific bleach activators as an essential feature**, does not give any pointer to the skilled person that the technical problem underlying the patent in suit could also be solved by using bleach activators different from those described in document (9), and thus even less by using a bleach activator as now claimed.

4.3.9 Document (2) relates to bleaching detergent compositions containing persalts, which will form hydrogen peroxide in aqueous solution, and organic carboxylic esters as bleach activators giving titres of not less than 1.5 ml 0.1 N Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> in a test defined in this document, which esters include compounds of the formula



wherein  $R_1$  exerts an electron-attracting effect, and  $R_2$  may be an **alkyl**, aryl or alicyclic radical (cf. page 1, line 31 to page 2, line 14, page 2, lines 85 to 96 and 105 to 111, and page 3, lines 4 to 10). Examples of such esters concern **acetic acid** or **benzoic acid** esters of phenols or substituted phenols, including **esters of phenol sulphonates**, certain monohydric or polyhydric alcohols, certain mono- and disaccharides, and of N-substituted derivatives of hydroxylamine, as well as esters obtained by acylation of aldehydes and esters of the enolic forms of ketones (cf. page 2, lines 19 to 75). Apparently preferred esters, which are used in the examples, are chloral diacetate, glucose penta acetate and the **benzoyl** ester of commercial sodium phenol sulphonate (cf. the Examples 1, 2 and 3 respectively). It teaches that **by using these esters improvements in bleaching of textiles at low temperatures can be obtained** (cf. page 1, lines 9 to 35). A typical textile to be treated is **cotton cloth stained by tea** (cf. the examples). The mixed ester/persalt content in the bleaching detergent compositions may be as high as 70% by weight provided that these components are taken in **ratios of 1/4 to 2, preferably 1/2 to 3/2, molecules of ester per atom of available oxygen** (cf. page 3, lines 87 to 91).

Document (3) relates to a further development of the compositions described in document (2) in that **the tendency of a bleach activating ester and a persalt to decompose during storage in the presence of one another can be markedly reduced by using the ester in a particular granular form** (cf. page 1, line 9 to page 2, line 16). As indicated above (see under points 3.1.2 to 3.1.5), the bleach activator is preferably a solid reactive organic ester derived from an aliphatic carboxylic acid having not more than 10 carbon atoms

and a phenol sulphonate (cf. page 2, lines 9 to 34). **Particularly preferred bleach activators are p-acetoxy-, p-butyroxy-, p-caproxy-, and p-capryloxybenzene sulphonate** (cf. page 2, lines 30 to 42, and the examples). **The most preferred activators are, for economical reasons, the esters of acetic acid** (cf. page 2, lines 21 to 26). Furthermore, the bleaching compositions contain preferably a proportion of from 1/4 to 4, and more preferably 1/2 to 3/2, of the bleach activator to each atom of available oxygen in the persalt present (cf. page 2, lines 100 to 104), corresponding to **preferred ratios of available oxygen to the activator of from 1 : 4 to 4 : 1, and more preferred of from 2 : 3 to 2 : 1.**

Document (1) also relates to a further improvement of the compositions described in document (2) in that **the tendency of certain bleaching compositions disclosed therein to cause fading of the colour of dyestuffs present on textiles can be reduced by employing in the bleach compositions a higher proportion of available oxygen to ester** (cf. page 1, line 9 to 57). Preferably from 4.5 to 10 atoms of available oxygen are used for each molecule of ester (cf. page 2, lines 31 to 33). Suitable bleach activators are esters of **aryl** carboxylic acids, in particular phenyl benzoate and **benzoic esters of a phenol sulphonate** (cf. page 1, lines 58 to 69, and page 1, line 81 to page 2, line 27).

4.3.10 The Respondent contended lack of inventive step essentially on the basis of the combined disclosure of document (9) teaching that the positioning of the active bleaching species at the textile surface, providing an improved bleaching of dingy fabrics, appeared to be due to the relatively long hydrocarbyl-lipophilic substituent R or R<sup>1</sup> of the bleach activators

in question, and documents (1) to (3) teaching that o.a. alkanolic esters of phenol sulphonates are particular suitable bleach activators, suggesting that the leaving groups described in document (9) could be replaced by the leaving groups as claimed in the patent in suit.

4.3.11 However, as follows from the considerations under point 4.3.9 above, documents (1) to (3) concern technical problems and their solutions totally unrelated to those indicated in the patent in suit. Thus, in the Board's view, these documents contribute nothing to the solution of the present problem defined above and, therefore, would have been disregarded by the skilled person.

4.3.12 Moreover, even if the skilled person had taken these documents into consideration, he would have been left - as set out below - with technical information which does not suggest the claimed solution of the present technical problem.

It is true that a skilled person might derive from documents (2) and (3) that the leaving groups of the bleach activators defined in document (9) possibly could be replaced by a derivative of phenol sulphonate or carboxylate (see under point 4.3.9 above, in particular the first two paragraphs). However, the decisive fact for assessing inventive step remains that neither document (9) nor the combined teaching of documents (9), (2) and (3) comprise any suggestion that by doing so **a satisfying dingy fabric clean up would be achieved.**



In this context, it is observed by the Board that according to the established jurisprudence of the Boards of Appeal for determining lack of inventive step, it is necessary to show that considering the teaching of the relevant documents as a whole, without using hindsight based on the knowledge of the claimed invention, the skilled person **would** have arrived at the **claimed solution of the technical problem to be solved**. However, as indicated above, a skilled person, when trying to solve the technical problem underlying the patent in suit, would not have any reason to replace the leaving groups defined in document (9), let alone to replace them by ones, corresponding to those now claimed.

Furthermore, the Board observes regarding document (1) that the teaching of this document is less relevant than that of documents (2) and (3), since it concerns bleaching detergent compositions containing esters of **aryl** carboxylic acids as suitable bleach activators and, thus, rather leads away from the solution of the present technical problem as claimed, which comprises, as an essential feature, the use of esters derived from alkanolic acids containing relatively long lipophilic alkyl chains as defined in present Claim 1.

4.3.13 In conclusion, the Board finds that the bleaching detergent compositions according to Claim 1 of the auxiliary request involves an inventive step in the sense of Article 56 EPC.

Since Claims 2 to 6 relate to particular embodiments of the compositions claimed in Claim 1, they are also allowable.

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 the set of claims submitted as auxiliary request at the oral proceedings on 3 May 1996, and a description to be adapted.

The Registrar:

The Chairman:

E. Görgmaier

A. Nuss