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D E C I S I O N
of 28 September 2004

Case Number: T 0860/00 - 3.3.6

Application Number: 91305058.9

Publication Number: 0460925

IPC: C11D 3/10

Language of the proceedings: EN

Title of invention:
Detergent compositions

Patentee:
UNILEVER PLC, et al

Opponents:
Henkel KGaA
The Procter & Gamble Company

Headword:
Particulate detergent composition/UNILEVER

Relevant legal provisions:
EPC Art. 123(2), 56

Keyword:
"Inventive step (main request - no): surprisingly improved property not credible in respect of the whole range of the claimed compositions"
"Inventive step (first auxiliary request - yes): surprisingly improved property"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0860/00 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 28 September 2004

Appellants: (Proprietors of the patent)	UNILEVER PLC Unilever House Blackfriars London EC4P 4BQ (GB) UNILEVER N.V. Weena 455 NL-3013 AL Rotterdam (NL)
Representative:	Waldren, Robin Michael Lloyd Wise Commonwealth House 1-19 New Oxford Street London WC1A 1LW (GB)
Respondent I: (Opponent I)	Henkel KGaA VTP (Patente) D-40191 Düsseldorf (DE)
Respondent II: (Opponent II)	The Procter & Gamble Company One Procter & Gamble Plaza Cincinnati, Ohio 45202 (US)
Representative:	Lawrence, Peter Robin Broughton GILL JENNINGS & EVERY Broadgate House 7 Eldon Street London EC2M 7LH (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 27 June 2000 revoking European patent No. 0460925 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: P. Krasa
Members: P. Ammendola
V. Di Cerbo

Summary of Facts and Submissions

I. This appeal is from the decision of the Opposition Division revoking European patent No. 0 460 925 relating to detergent compositions.

II. The patent application as originally filed contained 12 claims of which claim 1, the only independent claim, reads as follows:

"*1. A particulate detergent composition comprising anionic surfactant, alkali metal aluminosilicate builder and optional sodium carbonate, and optionally other detergent ingredients, characterised in that it comprises:*

(a) from 17 to 35 wt% of non-soap detergent-active material consisting essentially of:

(i) from 5 to 35 wt% of an anionic surfactant component consisting of primary alcohol sulphate [10-100 wt% of (i)] optionally together with alkylbenzene sulphonate [0-90 wt% of (i)],

(ii) optionally from 0 to 10 wt% of nonionic surfactant,

(iii) optionally from 0 to 10 wt% of further anionic surfactant other than primary alcohol sulphate or alkylbenzene sulphonate,

(b) optionally from 0 to 10 wt% of fatty acid soap,

(c) from 25 to 45 wt% (anhydrous basis) of crystalline or amorphous alkali metal aluminosilicate,

(d) from 0 to 10 wt% of sodium carbonate if the anionic surfactant component (a)(i) contains 10-60 wt% of primary alcohol sulphate, from 0 to 20 wt% of sodium carbonate if the anionic surfactant component (a)(i) contains 60-80 wt% primary alcohol sulphate, and from 10 to 20 wt% of sodium carbonate if the anionic surfactant component (a)(i) contains 80-100 wt% primary alcohol sulphate,

(e) optionally other detergent ingredients to 100 wt%."

III. Opponents I and II sought revocation of the patent for lack of novelty and inventive step (Article 100(a) in combination with Articles 52(1), 54 and 56 EPC). Opponent II also raised the grounds of opposition under Articles 100(b) and 100(c) EPC. They relied *inter alia* on:

Document(3) = EP-A-0 114 308,

Document(5) = EP-A-0 340 013,

Document(6) = JP-A-62 240 397 (English translation)

and

Document(7) = US-A-4 000 094.

During the opposition proceedings, additional experimental data were filed by the Patent Proprietors.

IV. In the decision under appeal, the Opposition Division also considered an amended claim 1 according to an "auxiliary request". Its subject-matter was directed to a composition of the invention with a bulk density of at least 650 g/l, free of sodium carbonate and wherein primary alcohol sulphate (hereafter "PAS") and linear alkylbenzene sulphonate (hereafter "LAS") constitute 25 to 75 wt% and 25 to 75 wt%, respectively of the anionic surfactant ingredient *(a)(i).*

The Opposition Division found that the original patent application provided sufficient support for a composition with these features (see the decision under appeal, point 4.1 in combination with points 2.1 and 2.2). It also considered the subject-matter of this claim admissible in view of the requirements of Articles 83 and 123(3), as well as novel over the prior art. It stated, however, (see point 4.4 of the decision under appeal, page 12, lines 5 to 9 from the bottom) that it was common general knowledge that the detergency performance of anionic surfactants such as PAS and LAS was strongly dependent on their chain lengths and observed that the experimental data in the patent in suit, as well as all other experimental data submitted by the Appellants during the opposition proceedings, referred only to compositions wherein the PAS was a sulphated narrow-cut coconut oil enriched in C_{12} to C_{14} alcohols by fractionation (hereafter

"cocoPAS"). Therefore, the Opposition Division found that this experimental data could demonstrate the achievement of a maximized detergency exclusively for compositions containing the specific PAS and LAS used in the experiments, while the other claimed compositions - lacking a credibly demonstrated technical advantage vis-à-vis those of Document (5) - would be obvious in view of this prior art.

V. The Patent Proprietors (hereafter Appellants) lodged an appeal against this decision.

VI. At the oral proceedings before the Board, held on 28 September 2004, they withdrew all former requests and filed three sets of amended claims labelled as main request and first and second auxiliary request.

The amended claims in these requests that are relevant for this decision are as follows:

Claim 1 of the **main request** differs from that of the patent application in that the original wording

"*A particulate detergent composition*"

and those defining components *(i)* and *(d)* (see above point II) have been respectively replaced by

"*A particulate detergent composition having a bulk density of at least 650 g/l*",

"*(i) from 5 to 35 wt% of an anionic surfactant component consisting of 25 to 75 wt% of primary*

alcohol sulphate and from 25 to 75 wt% of linear alkylbenzene sulphonate,"

and

"*(d) the composition being free of sodium carbonate,*".

Claim 1 of the **first auxiliary request** differs from that of the main request only in that the expression

"*25 to 75 wt% of primary alcohol sulphate*"

in the prior definition of component *(i)* has been replaced by

"*25 to 75 wt% of coconut primary alcohol sulphate which is a narrow-cut material enriched in C_{12} and C_{14} by fractionation*".

The other claims 2 and 3 of the first auxiliary request are dependent on claim 1 and correspond substantially to claims 10 and 11 of the patent application as filed.

VII. The Appellants submitted in writing and orally the following arguments relevant for this decision.

In respect of the compliance of claim 1 of the main request with the requirements of Article 123(2) EPC, they argued that this claim was supported *inter alia* by the statements at page 6, lines 26 to 34, which were generalizations of the results obtained in the examples. The reference to the different examples in these generalizations was only a pointer to the experiments

from which the general technical teaching expressed therein was extracted.

With regard to the inventive step assessment for the subject-matter of claim 1 of the first auxiliary request they considered the closest state of the art to be represented by the generic disclosure in Document (5), in respect of which the claimed composition represented a selection, and conceded that in the absence of an unexpected advantage the compositions of the invention would have to be regarded as obvious in view of the disclosure in this citation.

The Appellants argued however that the data in table II of the patent in suit demonstrated the presence of an unexpectedly superior detergency of the claimed subject-matter.

They conceded that the detergent capacity of a surfactant might be influenced to some extent also by its chain lengths, but maintained that it was not known that the differences in chain lengths among the PAS conventionally used in detergent compositions resulted in totally different levels of detergency. They concluded that, in the absence of any evidence to the contrary, the effect observed in these examples of the patent based only on "cocoPAS" should have been considered representative of the whole group of PAS conventionally used in detergent compositions. They also stressed that the patent in suit would not indicate any preferred LAS surfactant, thereby implicitly confirming the fact that the kind of LAS would not noticeably influence the level of detergency,

and that in this respect the Respondents had provided no evidence to the contrary.

VIII. The Respondents refuted the Appellants' arguments and argued in writing and orally substantially as follows.

None of the Appellants' requests satisfied the requirements of Article 123(2) EPC, because the original patent application mentioned only certain ranges for the amount of PAS in respect of the total amount of PAS and LAS altogether (hereafter indicated as "relative amount of PAS") in combination with ranges for the amount of sodium carbonate in the composition. The amended claims instead defined other completely new ranges for the relative amount for PAS (and the corresponding relative amount of LAS) in combination with the arbitrarily selected carbonate amount of nil. In addition, the patent application explicitly attributed the synergistically improved detergency only to compositions with low carbonate content and this was confirmed by the experimental data provided by the Appellants themselves. In particular, no synergistic effect was disclosed in the patent application for the compositions free of carbonate. Finally, the above-identified description at page 6 of the patent application disclosed only the results obtained in specific examples and no general teaching as to the advantageous combination of certain ratios of the PAS/LAS amounts with no sodium carbonate.

With regard to the assessment of inventive step Respondent II considered the application of the problem solution approach to the present case to be incorrect, because the claimed compositions resulted from simply

combining ingredients that were conventional in the field of detergents according to methods also conventional for detergents. Therefore, it considered it was more appropriated to start from the common general knowledge of the skilled person as a whole rather than from a specific prior art.

Additionally, both Respondents considered that the prior art disclosed in Document (3) or (6) would represent a more appropriate starting point for the problem solution approach. In particular they maintained that Example 2 of Document (3) differed from the claimed compositions in view of the lower density and stressed that it would be obvious to use conventional compacting methods to increase it. They stressed that Document (7) also disclosed LAS containing detergent compositions with high zeolite content and free of carbonate, for instance in Example B.

They contested the meaningfulness of the experimental evidence provided by the Appellants and argued, in particular, that the skilled person could at most consider the experimental comparison in table II of the patent in suit sufficient to demonstrate an improved detergency exclusively for the specific compositions of the invention disclosed in that table, i.e. compositions based on a certain specific PAS/LAS pair with specific amounts of a specific zeolite *(c)* and of the other ingredients actually used therein.

IX. The Appellants requested that the decision under appeal be set aside and the patent be maintained on the basis of the main request or alternatively on the basis of

the first or second auxiliary request, all requests submitted at the oral proceedings.

X. The Respondents requested that the appeal be dismissed.

Reasons for the Decision

Claim 1 of the main request

1. Admissibility in view of Article 123(2) EPC

1.1 Article 123(2) EPC prohibits amendments of a European patent that result in the extension of its subject-matter beyond the content of the application as filed. It is the case law of the Boards of Appeal that this content only encompasses what can be directly and unambiguously deduced from the disclosure of the application as filed (see e.g. the Case Law of the Boards of Appeal of the EPO, 4th edition, III.A.3.3, page 219, second paragraph).

Accordingly, also the disclosure implicit in the patent application - i.e. what any person skilled in the art would consider necessarily implied in the patent application as a whole (e.g. in view of basic scientific laws) - is relevant for the requirements of Article 123(2) EPC.

1.2 Claim 1 of the present request differs from claim 1 of the original patent application in the features already identified above (see point VI).

It is self-evident that the composition with a bulk density of at least 650 g/l is explicitly defined in claim 12 of the patent application as originally filed.

This has not been disputed by the Respondents, who have however argued that the patent application would disclose a relative amount of 25 to 75 wt% of PAS neither *per se* nor specifically in compositions of the invention free of sodium carbonate.

1.3 The Board observes that the range for the amount of sodium carbonate and that for the relative amount of PAS are **explicitly correlated to each other** throughout the patent application. For instance, the definition of *(d)* in claim 1 of the patent application reads "…***from 0 to 10 wt%** of sodium carbonate **if** the anionic surfactant component (a)(i) contains **10-60 wt%** of primary alcohol sulphate, **from 0 to 20 wt%** of sodium carbonate **if** the anionic surfactant component (a)(i) contains **60-80 wt%** primary alcohol sulphate, and **from 10 to 20 wt%** of sodium carbonate **if** the anionic surfactant component (a)(i) contains **80-100 wt%** primary alcohol sulphate,…*" (see above point II, emphasis added by the Board). These explicit correlations logically also imply that each **entire** range given for the sodium carbonate, which clearly includes both end points, is disclosed in the patent application in combination with the **whole** range of the PAS relative amount correlated thereto, and *vice versa*. For instance, the expression "…***from 0 to 10 wt%** of sodium carbonate **if** the anionic surfactant component (a)(i) contains **10-60 wt%** of primary alcohol sulphate,*" can only mean that the amount of sodium carbonate may freely vary from 0 to 10 wt% as long as the PAS relative amount is any of from 10 to 60 wt%. Therefore

it **necessarily** also implies that each of the specific end point values of the range for the sodium carbonate amount, i.e. 0 or 10 wt%, may be combined with the entire range 10 to 60 wt% for the PAS relative amount.

Since the application as filed explicitly correlates the 0 to 10 wt% range of sodium carbonate not only to the PAS relative amount of 10 to 60 wt% (in the just cited portion of claim 1) but also to that of 60 to 75 wt% (e.g. in the dependent claim 4, which reads "*A detergent composition....characterized in that the anionic surfactant component (a)(i) comprises from 60 to 75 wt% primary alcohol sulphate and from 25 to 40 wt% of linear alkylbenzene sulphonate, and the composition contains from 0 to 10 wt% of sodium carbonate.*"), it is apparent that the patent application discloses explicitly also the correlation between the whole range of 0 to 10 wt% for the amount of sodium carbonate and the whole range of 10 to 75 wt% for the relative amount of PAS. Therefore, this correlation also **necessarily** implies the disclosure of **an amount of 0 wt% for the sodium carbonate in combination with the whole range of relative amount of 10 to 75 wt% for PAS**.

1.4 The Board notes further that the wording used in the passage at page 6, lines 23 to 34, of the published patent application (see in particular lines 28 to 29 "*At 50 wt% PAS/50 wt% LAS (Examples A and 4) and at 25 wt% PAS/75 wt% LAS (Examples B and 5), detergency was significantly better in the absence of carbonate.*") discloses that at PAS/LAS weight ratios of 50/50 and 25/75 the compositions without sodium carbonate have resulted in improved levels of detergency. In these

expressions the achieved cleaning effect is explicitly correlated **only** to the ratio of PAS/LAS amounts and to the amount of sodium carbonate, while the example numbers (mostly reported in parentheses) simply identify from which experimental results the inventors have extracted these general teachings.

1.4.1 The Respondents' submissions that these parts of the patent specification described merely the results achieved in the examples, are not supported by any evidence and contrary to the explicitly disclosed exclusive relation between the cleaning effect (on one side) and the ratio of PAS/LAS amounts and the presence or absence of sodium carbonate (on the other side). Therefore, the Board has no reason to interpret the cited description at page 6 contrary to its literal meaning indicated above.

1.4.2 Thus, the Board finds in particular that the above cited portion of page 6, lines 28 to 29, discloses as generally preferred specifically the **relative amount of 25 wt% PAS** in combination with no sodium carbonate.

1.5 Hence, the Board concludes that the patent application as filed discloses compositions of the invention **free** of sodium carbonate and comprising PAS in a relative amount from **10 to 75 wt%** (in claims 1 and 4, see above point 1.3) and identifies, within this range, a generally preferred relative amount of PAS of **25 wt%** (at page 6, lines 28 to 29, see above point 1.4). Thus, the original patent application discloses directly and unambiguously also the compositions of the invention free of sodium carbonate wherein the range of relative amount for PAS goes from 25 to 75 wt%, thereby

providing a basis for the amendment in the definitions of *(a)(i)* and *(d)* of present claim 1.

1.6 The Respondents' further allegations as to the fact that the patent application would disclose explicitly the occurrence of a so-called "*synergistic effect*" only in the compositions of the invention containing some sodium carbonate are considered irrelevant to the assessment of the requirements of Article 123(2) EPC. Neither the provisions of this article nor the remaining wording in claim 1 require that the claimed subject-matter should only be limited to that for which the original patent application alleges a technical advantage. The disclosure in the patent application of certain embodiments of the invention as very advantageous over the prior art does not render added subject-matter the other **originally disclosed** embodiments of the invention, even if these are not disclosed to provide the same advantage or any advantage at all.

1.7 Hence, the subject-matter of claim 1 of this request is found to comply with the interdiction ruled under Article 123(2) EPC.

2. Admissibility in view of Rule 57(a) and Articles 84 and 123(3) EPC and novelty (Articles 52(1) and 54 EPC)

The Board is satisfied that the amendments (see above point VI) to the originally granted claim 1 that result in claim 1 under consideration comply with the requirements of Rule 57(a) and Articles 84 and 123(3) EPC.

The Board is also satisfied that the subject-matter of present claim 1 is novel.

Since the Respondents raised no objections in these respects no detailed reason needs to be given.

3. *Inventive step (Articles 52(1) and 56 EPC)*

3.1 Respondent II has argued that in the present case it would not be appropriate to assess inventive step according to the "problem and solution approach" normally used by the Boards, because the claimed detergent composition resulted from the combination according to conventional methods of conventional detergent ingredients and, hence, it would be impossible to identify the closest prior art. It stressed that in some decisions of the Boards of Appeal other approaches have been used. The Respondent II considered more meaningful, in the present case, to assess whether or not the claimed composition would be obvious on the basis of the common general knowledge of the skilled person.

3.1.1 The Board stresses that the problem and solution approach became the established approach for the inventive step assessment by the Boards of Appeal since it ensures objective assessment of inventive step avoiding *ex post facto* analysis of the prior art. To deviate from such approach would possibly be justified only under special circumstances.

The simple fact, quite common indeed, that detergent compositions for which a patent has been granted or a patent application has been filed are obtained by

compounding according to conventional methods conventional detergent ingredients cannot be considered something special which could justify not applying the problem and solution approach in such a situation. The Board finds that the only consequence necessarily deriving from this fact is rather that, as explicitly admitted by the Appellants too, novel detergent compositions of this kind are based on an inventive step **only** in as far as they provide an unexpected advantage.

3.2 Claim 1 (see above point VI) defines a detergent composition with a high bulk density (i.e. at least 650 g/l) and a high content of zeolite *(c)* (i.e. from 25 to 45 wt%) which is free from sodium carbonate and comprises 17 to 35 wt% of non-soap detergent active material *(a)* of which at least 5 wt% is constituted by PAS and LAS anionic surfactants, whereby PAS must constitute from 25 to 75 wt% of these two altogether.

3.3 When assessing inventive step according to the problem and solution approach, consideration must be given to prior art which seeks to solve the same or a similar problem, as does the patent under consideration.

The patent in suit identifies at page 2, lines 27 to 29, the technical advantage of the detergent composition of the invention as that of achieving an improved level of cleaning vis-à-vis that achieved by the detergent compositions of the prior art disclosed in Document (5).

Therefore the problem addressed in the patent in suit may be expressed in more general terms (i.e. not necessarily bound to the specific prior art identified

by the inventors) as that of providing high-bulk detergent compositions with high zeolite content producing **improved** detergency.

3.3.1 Also Document (5) addresses the technical problem of providing dense detergent compositions with good powder properties and excellent washing and cleaning performance (see in Document (5) the sentence bridging columns 2 and 3). To this effect it discloses (see for instance claim 15 in combination with claim 7) how to produce detergent compositions with a high bulk density of at least 650 g/l comprising 28 to 45 wt% of zeolite and 17 to 35 wt% of non-soap detergent active material, whereby a portion of this material is made of anionic surfactants such as LAS and PAS. In the examples in Document (5) however sodium carbonate is always present, although this is not defined as a mandatory component, and PAS is either absent or present in a relative amount of less than 25 wt%.

It is therefore immediately apparent that most of the compositions of claim 1 of the present request, even though not explicitly disclosed in Document (5), are encompassed within the broader group of high bulk density detergent compositions with high zeolite content of the prior art disclosed in this citation.

3.3.2 The Respondents have maintained that Documents (3) or (6) would disclose prior art at least as relevant as that of Document (5); in particular the detergent composition of Example 2 of Document (3) would satisfy most of the requirements of present claim 1.

3.3.3 The Board wishes to emphasize that even if one hypothesises (for the sake of an argument according to the reasoning of Respondent II at point 3.2 above) that any prior art detergent composition known to provide satisfactory cleaning results could actually be considered **equally** relevant to the present case, still the fact that the inventors of the patent in suit have chosen the prior art disclosed in Document (5) as starting point for attempting to solve the posed technical problem would render it appropriate to start the assessment of inventive step starting from such prior art. Only if the prior art disclosed in Documents (3) or (6) were found to be clearly **more** relevant than that of Document (5) it would be justified to deviate from the evaluation of the prior art made by the inventors of the patent in suit.

3.3.4 Document (3) however discloses in general only detergent compositions with bulk density of less than 630 g/l (see in Document (3) page 16, lines 19 to 23) and Document (6) although mentioning "granulating" at page 7, line 15, states immediately afterwards that spray dried powders, which notoriously have low bulk densities, are preferred.

Therefore, the prior art compositions of these citations cannot possibly be considered more relevant than the compositions of Document (5), since only the latter have a high bulk density of at least 650 g/l.

3.3.5 The unproven Respondents' allegation that the skilled person would indifferently start from detergent compositions with low or high bulk density, because this difference would influence e.g. only the amount of

space required by the detergent boxes on the shop shelf but not their washing performance, is also found not convincing. As credibly stressed by the Appellants, the Board considers instead that compacting a detergent powder can notably influence its speed of dissolution from the dispensing device into the washing liquor and, hence, also the final cleaning results. This was finally undisputed by the Respondents.

3.3.6 Therefore, the Board concludes that the skilled person would consider the general disclosure in Document (5) relating to detergent compositions with high bulk density, high zeolite content and excellent cleaning performance more relevant to the present case than that relating to detergent compositions with lower bulk density disclosed in Documents (3) and (6).

3.3.7 Moreover, the Board wishes to stress that Example 2 of Document (3), considered by the Respondents as representing the closest prior art (see above item VIII), differs from the presently claimed composition in more than one feature. In particular, in this prior art composition not only the bulk density, but also the overall amount of non-soap detergents are lower than required in present claim 1 (wherein the overall amount of non-soap detergent materials must add up to at least 17 wt% of the whole composition, see above point VI in combination with point II). Therefore, even this example is at most as close to the claimed composition as the examples of Document (5).

3.3.8 Similarly, the overall amount of non-soap detergents in the examples in Document (6) is also lower than the minimum amount required for component *(a)* in present

claim 1 (i.e. at least 17 wt% of the whole composition). In addition, the examples in this citation always comprise sodium carbonate and comprise not more than 10 wt% of zeolite. Finally, this citation discloses neither the bulk densities of these examples nor how these compositions have been prepared.

3.3.9 Therefore, it must be concluded that also in view of the number of features distinguishing the claimed composition from those exemplified as preferred embodiments in Documents (3) and (6), all these prior art examples, with the sole exception of possibly Example 2 of Document (3), are more distant from the claimed compositions than those of Document (5) (see above point 3.3.2). Therefore, it is not even in respect of the examples disclosed in these documents that the disclosure of Documents (3) or (6) becomes more relevant than that of Document (5).

3.3.10 Hence, the Board concurs with the finding of the Opposition Division (see the decision under appeal, point 4.4) that the prior art disclosed in the latter citation, which is also indicated in the disputed patent as being the closest one, represents the most appropriate starting point for the assessment of inventive step.

3.4 As already indicated above (see point 3.3.1) most of the claimed compositions belong to the group of detergent compositions generically disclosed in Document (5). The claimed compositions represent the sub-group wherein no carbonate but both PAS and LAS are always present, in the relative ranges of amounts specified in claim 1.

3.5 The Board observes that already the experimental evidence in the examples of the patent in suit allows comparison between the detergency achieved by compositions according to claim 1 and that obtained from comparative compositions containing either 100 wt% PAS or 100 wt% LAS as component *(a)(i)*. These latter compositions, although not identical to any of the examples of Document (5), are undisputedly also encompassed within the generic teaching of this citation and, thus, representative of this prior art. In particular, in table 2 of the patent in suit the chemical composition of the comparative Example E (containing no sodium carbonate but 100 wt% of LAS relative amount) can be considered intermediate between that of the invention Examples 3 to 5 and that of the Example 13 of Document (5).

3.5.1 The Respondents have alleged that these experimental data are not meaningful because:

a) the results in terms of level of detergency are given without any indication as to their reproducibility,

b) the level of detergency achieved is determined using "softened" washing water, not representative of the washing conditions which actually prevail in most of Europe and

c) the comparison of all the experimental data demonstrated that the best results are obtained in compositions containing low sodium carbonate amounts, while those free of carbonate provide notably different levels of detergency.

3.5.2 The Board observes however that the Respondents have provided no evidence demonstrating either that the alleged variability of the washing results would be so relevant as to result in examples of the invention which produce no improved detergency vis-à-vis the PAS-only and LAS-only comparative examples, or that under the washing conditions normally occurring in Europe this surprising effect would not be achieved by the claimed compositions.

Therefore, these statements remain unproven in respect of their possible technical implications and are to be disregarded as mere allegations.

Finally, the Board finds that the disclosure in the patent in suit of certain embodiments of the invention defined therein that could be regarded as particularly advantageous over the prior art does not render technically meaningless the embodiments of the patented invention which, although possibly less advantageous than the former one, still provide a credibly proved benefit vis-à-vis the prior art. Therefore, also a claim directed to the latter may be based on an inventive step. Accordingly, the Respondents' objection "c)" reported above is considered irrelevant.

3.5.3 In reply to a respective objection of the Respondents, the Appellants have stated that even though their tests were based on one and the same PAS, i.e. cocoPAS, still they demonstrated the achievement of a improved cleaning for the claimed compositions vis-à-vis those obtainable by the other compositions according to Document (5). They stressed that after the grant of the patent the burden of proving that no such effect was

achieved in patented detergent compositions based on different PAS lay with the Respondents, who, however, had provided no experimental data to the contrary.

The Appellants have argued that, even though the skilled person would expect that in general the detergent capacity of a surfactant also depends on its chain length, still such dependence could have no bearing on the demonstrated surprising detergency effect, in particular when considering the restricted group of PAS commercially available and normally used for detergent compositions.

3.5.4 The Board observes instead that the patent in suit explicitly identifies a preferred group of PAS and therein the most preferred one (see page 3, lines 31 to 39, i.e. the cocoPAS of all experimental data reported in the patent in suit or provided during the opposition proceedings), implicitly confirming that **the different PAS are not equivalent to the scope of the invention**.

It is such disclosure in the patent in suit that casts doubts on the credibility of the generic statement e.g. at page 2, lines 27 to 29, as to the fact that the compositions of the invention achieved improved detergency in comparison to that of the compositions of Document (5), because, apparently, this statement has only been based on the experimental data based on cocoPAS containing compositions.

3.5.5 The Appellants have neither contested that the experimental data based on that single cocoPAS were the only evidence from which they have extracted the

general statement in respect of the achieved technical advantage of all the compositions of the invention, nor have provided evidence that the common general knowledge indicated by the Opposition Division was not existing, nor filed further experimental comparisons representative of the whole class of PAS conventionally used in detergent compositions, nor provided any other evidence that the differences in the produced level of cleaning would actually be negligible within the group of PAS conventionally used for detergent compositions. Therefore, the Board finds the alleged technical advantage **not credible in respect of the whole class of PAS ingredients of the compositions of the invention**.

3.5.6 The Respondents' argument that the experimental data in the patent (as well as the further data filed during the opposition proceedings) would be representative only of the compositions of these experiments implies to consider critical to the improved detergency also other features of these compositions, such as:
i) the specific LAS, and
ii) the other specific ingredients
actually used in these experiments.

As discussed above, the relevant dependence of the improved detergency on the kind of PAS is implicitly demonstrated by the patent in suit. This fact renders convincing the finding of the Opposition Division and the corresponding Respondents' objection and shifts the burden of proving the contrary to the Appellants, who however, provided no evidence to this end.

3.5.7 However, in respect of the LAS, the Opposition Division referred only to an unproven common general knowledge

that the chain length of the LAS surfactant would also be critical to the achievement of the improved detergency observed in the experimental examples. However, the patent in suit does not identify preferred LAS, and the specific kind of LAS used in the examples is not even disclosed. Therefore, the patent in suit does not support (if not contradict) the possible existence of any common general knowledge as to the dependency of the level of detergency on the specific kind of LAS used in the examples. Accordingly, the Board finds that the statement in the decision under appeal referring to such common general knowledge amounts to a mere allegation and, therefore, that the burden of proof (that claimed detergent compositions wherein LAS is different from that used in these experiments would not provide the improved detergency stated in the granted patent) remains with the Respondents, who however have not provided it.

Similarly the criticality of the other ingredients argument "ii)" to the improved detergency is not only implicitly contradicted by the patent in suit (i.e. by the same statements cited above as to the fact that the achieved detergency was correlated only to the relative amount of PAS and LAS, to the kind of PAS and to the absence of sodium carbonate) but does not even correspond to an allegation in the decision under appeal. Therefore, the burden of providing supporting evidence to the Respondents' allegation that also the other (i.e. different from PAS and LAS) specific components of the detergent compositions used in the examples would be critical for the achievement of the surprisingly high detergency, remains clearly with the Respondents, who however have not provided it.

In conclusion, the Board finds that Respondents have provided no supporting evidence for their argument (that the ingredients listed above in "i)" and "ii)" would be critical for providing the improved detergency observed in the experiments of the Appellants). However, the portion thereof referring to the specific kind of used PAS "a)" is credible, because this is at least implicitly confirmed by the disclosure in the patent in suit.

3.6 In view of all these reasons, the Board concludes that the alleged improved detergency of the composition of the invention has not been supported by credible evidence in respect of the now claimed compositions which are **not based on cocoPAS** and, thus, that these compositions have only credibly solved the technical problem of providing an alternative to the compositions of this prior art.

Since, as conceded by the Appellants too, no inventive activity is required by the skilled person for providing an alternative to the compositions of Document (5) by an arbitrary selection among the alternatives encompassed in the general disclosure of this citation and since claimed compositions undisputedly results from such selections, the subject-matter of claim 1 of the main request is found to violate the requirements of Article 56 EPC and, hence, this request must be refused.

First auxiliary request

4. Admissibility in view of Rule 57(a) and Articles 84 and 123(2) and (3) EPC and novelty (Articles 52(1) and 54 EPC).

4.1 Claim 1 of this request differs from that of the main request only in that the PAS of component *(a)(i)* is limited to the cocoPAS.

The Board finds that this amendment is based on the disclosure in the patent examples and at page 3, lines 28 to 30, of the published patent application. This has not been disputed by the Respondents.

Of course, the same reasons indicated at point 1 above in respect of the support for the features distinguishing claim 1 of the main request to the originally filed one apply also to the same feature of claim 1 of this request.

Therefore the Board finds that present claim 1 complies with the interdiction ruled under Article 123(2) EPC.

4.2 The Board is satisfied that the amendments (see above point VI) to the originally granted claim 1 that result in claim 1 under consideration comply with the requirements of Rule 57(a) and Articles 84 and 123(3) EPC.

The Board is also satisfied that the subject-matter of present claim 1 is novel.

Since the Respondents raised no objections in these respects no detailed reason needs to be given.

4.3 The Board is also satisfied that the remaining claims 2 and 3 of this request comply with the requirements of Rule 57(a) and Articles 84 and 123(2) and (3) EPC.

These claims define preferred embodiments of the composition of claim 1 that has been found to be novel, therefore also their subject-matter is clearly novel.

Since the Respondents raised no objections in these respects no detailed reason needs to be given.

5. *Inventive step (Articles 52(1) and 56 EPC)*

5.1 The Respondents have alleged that the effect demonstrated by the experiments of Table 2 of the patent in suit only apply to the specific compositions of these experiments.

5.2 However, as already discussed above at point 3.5.6, they have provided no supporting evidence and the Board finds no reason in the patent in suit for assuming that the experiments based on cocoPAS would not be regarded by the skilled person as sufficient basis for generalizing the occurrence of improved detergency to the detergent compositions of claim 1, all based on cocoPAS. Accordingly, the Board concludes that this objection to the presently claimed compositions amounts to an unproven allegation and must be disregarded.

5.3 Therefore, the technical problem credibly relevant for the assessment of inventive step for the presently

claimed detergent compositions remains that indicated in the patent in suit (see above point 3.3) of providing high-bulk detergent compositions with high zeolite content producing **improved** detergency.

5.4 The Board finds that none of the available documents foreshadows that compositions containing PAS and LAS in the relative amounts disclosed in present claim 1 provide in the absence of carbonate better washing results than those based only on LAS as well as than those based only on PAS. In particular, neither from the comparison of Example 2 of Document (3) with the other examples in these citation, nor from Example B of Document (7) it becomes apparent that when the anionic surfactant in detergent compositions free of carbonate is a mixture of PAS and LAS these compositions produce a surprisingly high level of detergency and, in particular, so high as to be superior to those achievable when using similar compositions comprising only PAS or only LAS anionic surfactant.

Therefore, the Board concludes that it was not obvious for the skilled reader of Document (5) to expect that within the compositions embraced by the general disclosure in this citation, those which contained no sodium carbonate and wherein PAS and LAS were both present in substantial amounts provided an improved detergency.

Thus, the Board finds the subject-matter of claim 1 to be based on an inventive step.

5.5 The dependent claims 2 and 3 define preferred embodiments of the composition of claim 1 and, therefore, their subject-matter involves an inventive step for the same reasons given above for claim 1.

5.6 The Board concludes that the first auxiliary request of the Appellants complies with the requirements of Articles 52(1) and 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to maintain the patent on the basis of claims 1 to 3 of the first auxiliary request submitted during the oral proceedings and a description to be adapted thereto.

The Registrar: The Chairman:

G. Rauh P. Krasa