

Publication in the Official Journal Yes / No

File Number: T 34/90 - 3.3.1

Application No.: 84 200 271.9

Publication No.: 0 124 143

Title of invention: Process for the preparation of an anti-corrosive aqueous liquid detergent composition

Classification: C11D 3/08

DECISION
of 15 October 1991

Proprietor of the patent: UNILEVER NV, et al.

Opponent: Henkel Kommanditgesellschaft auf Aktien

Headword: viscosity reduction/UNILEVER

EPC Rule 2(1)

Keyword: "role of appeal proceedings: non-continuation of first instance ones"

Headnote

I. Appeal proceedings are wholly separate and independent from the first instance proceedings. Their function is to give a judicial decision upon the correctness of a separate earlier decision of the first instance department.

II. Therefore, even if a representative had lawfully used an alternative official language in the oral proceedings before the first instance, he has to file a new notice pursuant to Rule 2(1) EPC for the appeal proceedings.

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EPC Articles 52, 56; Rule 2(1)

Keyword: "closest state of the art" - "problem-solution approach"
"improvement - proper comparison"
"inventive step (yes)" - "role of appeal proceedings: non-continuation of first instance ones"

Headnote



Case Number : T 34/90 - 3.3.1

D E C I S I O N
of the Technical Board of Appeal 3.3.1
of 15 October 1991

Appellant : UNILEVER NV
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Respondent : Henkel
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W - 4000 Düsseldorf 1 (DE)

Decision under appeal : Decision of Opposition Division of the European
Patent Office of 22 September 1989, posted on
2 November 1989 revoking European patent
No. 0 124 143 pursuant to Article 102(1) EPC.

Composition of the Board :

Chairman : K. Jahn
Members : P. Krasa
J. Stephens-Ofner

Summary of Facts and Submissions

I. The mention of the grant of patent No. 0 124 143 in respect of European patent application No. 84 200 271.9 filed on 27 February 1984 was published on 1 April 1987 (cf. Bulletin 87/14) on the basis of nine claims. Claim 1 read:

"Process for the preparation of a neutral or low-alkaline silica-containing aqueous liquid detergent composition having a pH value of below 9.5 and comprising detergent-active material and detergency builder, characterized by the step of admixing particulate alkalimetal silicate into the aqueous base at a temperature of below 50°C."

II. A notice of opposition was filed in due time by the Respondent (Opponent) requesting the revocation of the European patent on the grounds of lack of novelty and lack of inventive step. The opposition was based, inter alia, on the following documents:

- (1) US-A-4 115 308,
- (2) Leaflet "Portil AW", Ausgabe Juli 1974, Henkel & Cie.

III. Claims 1 and 2 of the disputed patent were amended in the course of the opposition proceedings. By a decision delivered orally on 22 September 1989, with written reasons posted on 2 November 1989, the Opposition Division revoked the patent. The Opposition Division concluded that the subject-matter of Claim 1 of the disputed patent was novel but did not involve an inventive step. It accepted that a process corresponding to the pre-characterising part of Claim 1 was the closest state of the art, and defined the technical problem as the prevention of an unacceptable increase in viscosity on silicate addition to

liquid detergent compositions of the suspending type. It considered that document (2) provided an incentive to add particulate silicate to an aqueous base comprising surfactants and detergency builders, and that, accordingly, the skilled person would have automatically found the solution suggested in Claim 1 following the instructions of citation (2). According to the Opposition Division there was, furthermore, no surprising effect resulting from the claimed process, since, so it held, comparative example 8 of the disputed patent, which it accepted as being representative of the prior art, resulted in a composition having a viscosity within the range as specified in Claim 1.

IV. An appeal was filed against this decision on 22 December 1989. In his statement of grounds of appeal filed on 13 February 1990 and during oral proceedings held on 15 October 1991, the Appellant argued, that the comparative tests in the disputed patent demonstrated that, surprisingly, the viscosity of particular detergent compositions could be reduced as compared with that of the acknowledged closest state of the art, when waterglass solutions were replaced by particulate silicate. Furthermore the combination of this closest state of the art with document (2) was not appropriate, since the latter did not refer to the problem of unacceptable viscosity increase in liquid detergent compositions on the addition of waterglass.

In respect to document (1) the Appellant submitted, that this citation related to a different problem, i.e. the avoidance of recrystallisation phenomena, which was unrelated to the maintenance of the structure in liquid detergent compositions of the structured suspending type.

V. The Respondent's counterarguments were as follows: According to document (2) Portil dissolves up to 99% within 3 minutes when stirred at 20°C. Thus, the skilled person would have understood that without any heating, a clear solution of almost 100% of the particulate silicate may be obtained. While it was well-known to speed up dissolution by heating, such heating, if technically unnecessary, would have been avoided by the skilled person for simple economical reasons. Furthermore, the properties of Portil were disclosed in document (2). Therefore, it was logical and not inventive for the skilled person to use this commercial product in the manufacture of compositions known from (1) and so avail himself of its known advantages.

The closest state of the art, in the Respondent's submission, was disclosed in citation (1), which already used sodium silicate solids. Although it was concerned with paste-form detergent compositions, it also addressed the problem of undesired viscosity increase due to the silicate addition to detergent compositions, and suggested the addition of solid sodium silicate at temperatures below 50°C as a solution of this problem. The skilled person would have heeded the disclosure of document (1), despite of the fact that it related to paste-form compositions, because the problem of viscosity increase was generally linked to the silicate, and not to the particular detergent compositions. Furthermore, in the Respondent's submission, the paste-form detergent compositions of document (1) had to be subsumed under the term "liquid detergent". Thus, it would have been more appropriate for the Opposition Division to take citation (1) as closest state of the art than a wholly fictitious one.

Lastly, the Respondent submitted that the reduced viscosity of compositions obtained according to Claim 1 as compared with those disclosed in citation (1), were due to the higher dilution of the compositions manufactured according to the patent in suit. This, however, was not surprising and, therefore, the viscosity data in the present Claim 1 were irrelevant to the question of inventive step.

VI. The Respondent's representative having failed to meet the requirements of Rule 2(1) EPC, sought to make his submissions at the oral proceedings in an alternative official language of the EPO. This attempt to circumvent Rule 2(1) EPC was rejected by the Board for the reasons set out in paragraph 2 of this decision.

VII. The Appellant requested, as the main request, that the decision under appeal be set aside and that the patent be maintained on the basis of the description and claims submitted in the course of oral proceedings or on the basis of the further amended claims likewise submitted in the course of oral proceedings by way of auxiliary requests 1 and 2 respectively.

Claims 1 and 2 of the main request read as follows:

"1. Process for the preparation of a neutral or low-alkaline silica-containing aqueous liquid detergent composition of the structured suspending type, having a viscosity at 20°C in the range of 0.3 to 1.5 Pa s at a shear rate of $21s^{-1}$ and having a pH value of below 9.5 and comprising detergent-active material and detergency builder, characterized by the step of admixing particulate alkalimetal silicate into the aqueous base at a temperature of below 50°C.

2. Process according to claim 1, further characterized in that the composition contains sufficient electrolyte to effect structuring, in addition to the alkali metal silicate, said process comprising the further step of neutralization to neutral or low alkaline pH."

The Respondent requested that the appeal be dismissed.

At the end of the oral proceedings the Chairman announced the decision of the Board to allow the appeal.

Reasons for the Decision

1. The appeal is admissible.
2. Procedural issue concerning the language of the oral proceedings

Rule 2(1) EPC provides that: "Any party to oral proceedings before the European Patent Office may in lieu of the language of the proceedings, use one of the other official languages of the European Patent Office, on condition either that such party gives notice to the European Patent Office at least one month before the date laid down for such oral proceedings or makes provision for interpreting into the language of the proceedings...". Not having given the above-required notice, the Respondent also failed to provide interpretation which, as the Appellant's representative categorically stated, would have been necessary in the circumstances. The Respondent's representative submitted that because he had lawfully used an alternative official language in the oral proceedings before the Opposition Division, he should be allowed to use the same language in the hearing before the Board. Although not stated by him in clear terms, this submission

clearly implied that the appeal proceedings were no more than a continuation of the first instance, in this case the opposition proceedings. The Board wishes to reiterate the well established principle laid down in numerous cases in this and in other Boards of Appeal, that appeal proceedings are definitely not and were never intended to be the mere continuation of first instance proceedings. Rather, their function is to give a judicial decision upon the correctness of a separate earlier decision given by the first instance department. It follows, that for the purpose of deciding the permissibility of the use of an alternative official language under Rule 2(1) EPC, as well as for other procedural purposes, appeal proceedings are wholly separate and independent from first instance proceedings.

Accordingly, the Respondent's attempt to use an alternative official language, without fulfilling the requirements of Rule 2(1) EPC as they apply to these proceedings, is rejected.

3. Amendments

Claim 1 of the main request differs from Claim 1 as granted by incorporation of the passage "of the structured suspending type, having a viscosity at 20°C in the range of 0.3 to 1.5 Pa s at a shear rate of $21s^{-1}$ and". These features were disclosed in the application as originally filed (see page 2, lines 16 to 20 and page 8, lines 1 to 3; page 6, lines 32 to 36) and the patent specification as granted (see page 2, lines 27 to 29 and page 4, line 30; page 3, lines 42 to 44).

Claim 2 according to the main request differs from that as granted by the additional feature of being "further characterized in that the composition contains sufficient electrolyte to effect structuring, in addition to the

alkali metal silicate", which feature is supported by page 2, lines 16 to 20 of the application as originally filed, corresponding to page 2, lines 27 to 29 of the patent specification as granted. Claims 3 to 9 are identical with the respective claims as granted. Thus, all claims of the main request are duly supported by the application documents as originally filed and, being restricted, do not extend the scope of the claims as granted and, hence, comply with the requirements of Article 123 EPC.

4. Novelty

None of the cited documents discloses a process with all the features of present Claim 1, which is therefore novel. This not being in dispute in the appeal proceedings, no further comments are required.

5. State of the Art

5.1 The Respondent criticised the Opposition Division's acceptance as the closest prior art, the state of the art that was described in the patent in suit, and which is reflected in the pre-characterising part of Claim 1. He suggested, instead, document (1) as the most relevant prior art.

5.2 Document (1) discloses a process for the manufacture of alkaline, silicate-containing, paste-form detergent compositions. A preferred embodiment is a one-step process whereby the liquid and solid components (the latter comprising solid alkali metal silicates) are high-shear mixed at temperatures not exceeding about 48.9°C (120°F; column 2, lines 1 to 7 and the examples). The Respondent emphasised that paste-form detergents fall within the meaning of the term liquid detergent composition, as there are only three states of matter. Such a literal and

pedantic approach does not do justice to the realities of the matter, since paste-form detergent compositions and liquid detergent compositions differ not only in flow behaviour but also in their respective technical problems. Thus, whilst, according to document (1), the main problems relating to paste-form detergent compositions result from the "set up" of these compositions, which is a recrystallisation of their inorganic components (column 1, lines 31 to 47), and from the incompatibility of their components (column 3, lines 54 and 55), the main problems of liquid detergent compositions of the structured suspending type relate to the maintenance of the stability of their structure. It is worth observing that none of these matters were seriously contested by the Respondent. Therefore document (1) does not qualify as the closest state of the art.

5.3 The above considerations also hold true for document (2), which describes the properties of the commercial product Portil AW, a particulate sodium silicate and suggests, inter alia, its use in detergent and technical cleansing compositions as corrosion inhibiting, suds suspending, and alkaline component (first page, second paragraph). The terms "detergent" or "technical cleansing" are too indefinite by far in order to serve as a proper starting point for defining the technical problem underlying an invention in a particular field of detergents.

5.4 Since the opposition procedure did not reveal any piece of prior art closer than that described in the introductory part of the patent specification, the Board accepts that this piece of prior art is indeed the closest one. Accordingly, it was known in the field of manufacturing detergents to include an alkali metal silicate, conventionally in the form of a waterglass solution, as an anti-corrosion agent in detergent compositions. However,

the formulator was confronted with considerable problems relating to rheology and stability of the detergent system, due to the addition of effective amounts of silicate. Especially in liquid detergent compositions of the suspending type, such inclusion often gives rise to an unacceptable increase in viscosity (page 2, lines 9 to 14 and lines 20 to 21).

5.5 Such state of the art, already described in the application documents as originally filed, has been accepted by the Examining Division, obviously uncritically and without paying attention to the principle enunciated in decision T 248/85, OJ EPO 1986, 261, according to which this instance was obliged to ensure that the closest prior art was unambiguously and clearly specified (see especially paragraph 9.1 and 9.2 on page 268). Such a clarification would have been possible without difficulty in the examination procedure by requesting the Applicant to designate the respective document. The Opposition Division acceded to the Appellant's request to take as the starting point for defining the technical problem, such prior art as was described in the introduction of the patent specification. In the Grounds of Appeal, the Appellant again submitted, that this prior art was the closest one (see page 1, paragraphs 3 and 4). Therefore, it appears strange, that he called this state of the art "fictive" in his submission dated 15 August 1990, without giving reasons for such an assertion. This term was adopted by the Respondent in the oral proceedings, who suggested that the Board should rule on this subject.

Article 54(2) EPC provides that "The state of the art shall be held to comprise everything made available to the public...". A "fictive" state of the art does not comply with this precondition, because it lacks the condition of availability to the public.

In view of the submissions of the Appellant's Representative, the Board formed the impression that the above mentioned statements in the introductory part of the patent in suit did reflect the real state of the art, without however, being able to ascertain the true state of affairs, which, for two reasons was not necessary to do in the present case. Firstly, the Appellant was prepared to accept, to his disadvantage, a state of the art much closer to the patent in suit than the other citations were. Secondly, the Board has come to the conclusion that the documents cited do not preclude the maintenance of the patent in suit (in amended form) even in view of this "allegedly fictive" prior art. Hence, the Board is prepared, in these particular circumstances, to consider this state of the art as the closest one.

6. Problem and Solution

6.1 In view of this closest state of the art the problem underlying the disputed patent can be defined as the provision of a process for the manufacture of aqueous liquid detergent compositions of the structured suspending type comprising alkali metal silicates as corrosion inhibitor, which process avoids the undesired increase in viscosity experienced on addition of aqueous waterglass solutions to the compositions in question (cf. page 2, lines 9 to 22 of the printed patent).

The solution set out in Claim 1 is to admix to the aqueous base a particulate alkali metal silicate at a temperature of below 50°C.

6.2 It is established jurisdiction of the Boards of Appeal that, in order to assess whether or not a suggested solution is in fact effective, the technical effects of

the claimed invention are to be compared with those of the closest state of the art.

Whilst the Opposition Division defined the technical problem as stated above, and, thus, accepted that there was an effect (improvement) as compared with the closest prior art, it also concluded that "no surprising effect resulted from the claimed process". This clearly meant that the Opposition Division denied that the above problem was solved in the manner set out in Claim 1. Then, however, the technical problem should have been redefined. The reasoning behind the Opposition Division's opinion was that according to comparative example 8 of the disputed patent, considered representative for the state of the art, a liquid detergent composition was already obtained with a viscosity within the range given in Claim 1.

- 6.3 The Board disagrees with this view. Whenever the question has to be answered whether or not a particular technical problem has been successfully solved, the following has to be recognised: any comparison of the plain numerical values of the respective physical properties of the subject-matter disclosed in a piece of prior art and of the claimed subject-matter is invalid, as long as it fails to take into account all parameters which may control such numerical values. For a valid comparison one has to rely exclusively on experimental results that are truly comparable, i.e. all their relevant parameters are identical, except of course those, which are used to demonstrate the effect achieved.

The first instance disregarded this principle by comparing the viscosity values obtainable according to Claim 1 of the disputed patent (0.3 to 1.5 Pa s) with the corresponding figure of the prior art (1.06 Pa s), without

taking into due account the respective amounts of the components in the compositions concerned.

- 6.4 The sole figures available to the Board which satisfy the above criteria are given in examples 2, 3, and 5. Both parties agreed in the course of the oral proceedings that these examples according to the invention are comparable with example 6, which is representative of the state of the art, and that they show a reduced viscosity as compared with the latter.

Examples 2, 3, and 5 disclose the manufacture of aqueous liquid detergent compositions according to the invention, whereby 3% by weight of particulate sodium disilicate of the formula $\text{Na}_2\text{O} \cdot 2.1\text{SiO}_2$ are added to the same basic detergent composition (page 6, Table 1, Method 1, in combination with page 3, lines 45 and 46). Example 6 differs from these three examples in that the same amount of sodium disilicate of the formula $\text{Na}_2\text{O} \cdot 2\text{SiO}_2$ was incorporated into the said basic detergent composition by adding 9% of a 33% alkaline waterglass solution which is equal to 3% of the basic sodium disilicate.

In the Board's judgement the minor difference in the formulae of the alkali metal silicates is technically insignificant, and does not constitute an obstacle to a valid comparison of examples 2, 3, and 5 on the one hand, with example 6 on the other hand. Such comparison shows that the products obtained according to the examples 2, 3, and 5 have viscosities of from 1.02 to 1.29 Pa s, while this value is 4.7 for composition resulting from the process of example 6.

Similarly, for compositions having a lowered electrolyte content and on the basis of the same sodium disilicate content, example 9 according to the invention shows the

improvement in viscosity aimed at when compared with example 10 representing the state of the art. Hence the Board is satisfied that the above-defined problem is solved.

7. Inventive Step

It still remains to be decided whether the requirement of inventive step is met by the process claimed.

7.1 As previously mentioned, document (1) is concerned with a paste-form detergent composition and a technical problem different from that of the disputed patent. Therefore, even if the skilled person would have taken notice of document (1) in connection with the present technical problem, and even if this problem had been one relating to alkali metal silicates in general and not one confined to particular detergent compositions, he would have found no indication that the measures suggested in citation (1) for the prevention of the recrystallisation of inorganic material, and of the resulting drastic reduction in flow properties of the paste compositions (see document (1), column 1, lines 31 to 39) would have any beneficial effect on the desired viscosity and, thus, on the maintenance of the structure of the liquid detergent compositions as defined in present Claim 1.

7.2 Document (2) is, as already indicated, completely silent on the issue of viscosity increase in connection with the addition of alkali metal silicates to detergent compositions. While it is true that this citation suggests in a very general manner to use the particulate sodium silicate Portil AW in laundry detergent and cleansing compositions, it neither specifies particular types of such compositions, let alone those of the structured suspending type, nor indicates that such use of Portil AW

could result in any beneficial effect, apart from those, which were already known (see No. 5.3 above). Thus, while it is clear that the skilled person could have used Portil AW for solving the present problem, any assumption that he would have done so, could only be arrived at with hindsight.

- 7.3 Lastly, there is no pointer in any of the cited documents that an undesirable increase of the viscosity of aqueous liquid detergent compositions of the structured suspending type on addition of aqueous alkali metal silicate solution can be avoided if the process of Claim 1 is used. For all these reasons, in the Board's judgement, the proposed solution to the technical problem underlying the patent in suit is inventive, and in consequence independent Claim 1 is allowable. Dependent Claims 2 to 9, which relate to preferred embodiments of the process claimed in Claim 1, derive their patentability from that of Claim 1 and are likewise allowable.
- 7.4 The Appellant's main request being allowable, there is no need to consider the auxiliary requests.

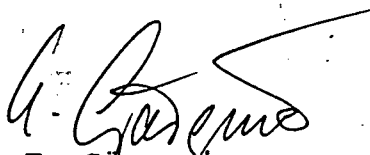
Order

For these reasons, it is decided that:

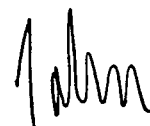
1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in an amended form on the basis of the main request submitted in the course of oral proceedings.

The Registrar:

The Chairman:



E. Görgmaier



K. Jahn