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Datasheet for the decision of 11 November 2011

Case Number: T 1892/09 - 3.3.06

Application Number: 02806319.6

Publication Number: 1468070

IPC: C11D 17/00, C11D 1/66, C11D 3/00

Language of the proceedings: EN

Title of invention:
Detergent composition in tablet form

Patentee:
Unilever PLC
Unilever N.V.

Opponent:
Henkel AG & Co. KGaA

Headword:
Laundry detergent tablet/UNILEVER

Relevant legal provisions:
RPBA Art. 13(3)

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step (main request): no - claim to be interpreted literally"
"Admissibility of auxiliary request submitted during oral proceedings: yes"
"Inventive step (auxiliary request): no - improved properties to be expected; obvious to try"

Decisions cited:
T 0681/01, T 1279/04, T 0223/05

Catchword:
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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1892/09 **-** 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 11 November 2011

Appellant: (Opponent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 13 July 2009 rejecting the opposition filed against European patent No. 1468070 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman: P.-P. Bracke
Members: L. Li Voti
J. Geschwind

Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division to reject the opposition against the European patent no. 1 468 070 concerning a laundry detergent tablet.

Claim 1 of the granted patent reads as follows:

" 1. A compacted laundry detergent tablet which comprises:
(a) solid particulate detergent base powder comprising surfactant and optionally builder;
(b) optionally other particulate detergent ingredients; and
(c) a binder material between the detergent base powder particles and/or the optional particulate detergent ingredients
characterised in that the binder comprises
(c)(i) from 10 wt% to 90 wt% of a nonionic surfactant having a melting point of from 30 to 70°C; and
(c)(ii) from 10 wt% to 90 wt% of a water-soluble organic material having a melting point of from 30 to 70°C."

II. In its notice of opposition the Opponent sought revocation of the patent on the grounds of Article 100(a) EPC 1973, because of lack of novelty and inventive step of the claimed subject-matter.

The Opponent referred during the opposition proceedings *inter alia* to the following documents:

(6): GB-A-2327947;

(8): WO-01/10993 and
(10): EP-A-711828.

III. The Opposition Division found in its decision that the claimed subject-matter was novel and involved an inventive step over the prior art.

As regards inventive step it found, in particular, that the skilled person would not have had any motivation for combining the teaching of document (6) with that of document (8), since the hydrotrope binders of document (8) were used for improving the dissolution and dispersion of the surfactant present within the base powder particles and not within the binder.

Moreover, even though the skilled person could have envisaged combining the polyethylene glycol binder disclosed in document (10) with that of document (6), he would not have done it with the expectation of achieving the benefits shown in the comparative tests contained in the patent in suit.

IV. An appeal was filed against this decision by the Opponent (Appellant).

Oral proceedings were held before the Board on 11 November 2011.

The Respondents (Patent Proprietors) submitted during oral proceedings an amended set of claims as auxiliary request.

Claim 1 of the set of claims according to the auxiliary request differs from claim 1 as granted only insofar as

it specifies that the water-soluble organic material (c)(ii) is a polyethylene glycol.

V. The Appellant submitted *inter alia* that

- the wording of claim 1 as granted allowed that components (c)(i) and (c)(ii) related to the same compounds; therefore, the claimed subject-matter was not inventive in the light of the teaching of document (6);

- as regards claim 1 according to the auxiliary request, the comparative tests present in the patent in suit showed only that the addition of a polyethylene glycol to the nonionic surfactant binder improved the dissolution properties of the tablet; however, they could not show any credible improvement of the hardness of the tablet or with respect to the use of a binder consisting to 100% of polyethylene glycol or containing substantial amounts of other gelling binders such as anionic surfactants;

- starting from document (6) as closest prior art, it would have been obvious for the skilled person to reduce the amount of gelling nonionic surfactant in the binder and to replace it with a known non-gelling binder, such as the polyethylene glycol of document (10) or the hydrotrope of document (8), in order to improve the properties of the tablet, for example its dissolution capacity; therefore, the claimed subject-matter of claim 1 according to the auxiliary request lacked an inventive step.

The Appellant submitted during oral proceedings that the late filed auxiliary request had not to be admitted.

VI. The Respondents submitted in writing and orally that document (6) represented the closest prior art and that there was no incentive for the skilled person to combine the teaching of document (6) with that of document (8) or of any other document in order to arrive at the claimed subject-matter.

In particular, there was no suggestion in the prior art that a combination of a nonionic surfactant of type (c)(i) with an organic material of type (c)(ii) and, in particular, with a polyethylene glycol as claimed according to the auxiliary request could bring about the unexpected effects shown in the comparative tests contained in the patent in suit.

As regards the admissibility of the auxiliary request submitted during oral proceedings, the Respondents declared that it had been filed for overcoming some of the objections arisen from the oral discussion. Furthermore, claim 1 of the auxiliary request was based on a granted dependent claim and supported by the examples of the patent in suit. Therefore, the Appellant could not have been taken by surprise by such an amendment.

VII. The Appellant requests that the decision under appeal be set aside and the patent be revoked.

VIII. The Respondents request that the appeal be dismissed or, in the alternative, that the patent be maintained on

the basis of the auxiliary request filed during oral proceedings.

Reasons for the Decision

1. *Respondents' main request (claims as granted)*

1.1 Inventive step

1.1.1 The invention of claim 1 relates to a laundry detergent tablet comprising a nonionic surfactant as one component of the binder material present between the detergent base powder particles, which contain a surfactant, and/or the optional particulate detergent ingredients (see paragraphs 1 and 13 and claim 1 of the patent in suit).

As explained in the description of the patent in suit, even though it is highly desirable to provide a tablet which is both physically robust and also rapidly dissolves in the wash, it can be difficult to obtain both properties together (paragraph 3).

In particular, it is generally known that the dissolution behaviour of the tablets can be inhibited by the presence of surfactant, which can form gel phases during dissolution (paragraph 4).

For solving these technical problems the prior art had already proposed in document (10) the use as binder of polyethylene glycol, which is an excellent disintegrant but provides little useful wash function and takes up

precious formulation space within the tablet (paragraph 8).

Therefore, also nonionic surfactants had been suggested as potential binders. For example, document (6) suggested the use of specific nonionic surfactants. However, the dispersing and dissolution properties of such tablets were found to be poor (paragraphs 9 to 11).

The technical problem underlying the invention thus is formulated in the patent in suit as the provision of a laundry detergent tablet comprising a nonionic surfactant as component of the binder and showing nevertheless both improved strength and dissolution/dispersion properties (see paragraph 12).

1.1.2 The Board agrees that the above mentioned document (6), indicated in the patent in suit as starting point for the invention, and chosen as such by the Opposition Division and by the Respondents, represents the most suitable starting point for the evaluation of inventive step.

The Board remarks that claim 1 as granted concerns literally a tablet wherein the binder material comprises from 10 wt% to 90 wt% of a nonionic surfactant having a melting point of from 30 to 70°C and from 10 wt% to 90 wt% of a water-soluble organic material having a melting point of from 30 to 70°C.

There is no doubt that both wordings "a nonionic surfactant having a melting point of from 30 to 70°C" and "a water-soluble organic material having a melting point of from 30 to 70°C" are terms which are clear by

themselves to the skilled person. Therefore, since claim 1 is clear as it stands, it should be interpreted giving to these terms their literal meaning (see also the decisions T 681/01, point 2.1.1 of the reasons; T 1279/04 point 3 of the reasons, and T 223/05, point 3.5 of the reasons).

There is also no doubt that a nonionic surfactant having a melting point of from 30 to 70°C can be a water-soluble organic material having a melting point of from 30 to 70°C. Therefore, the wording of claim 1 encompasses the use of a binder material wherein both components (c)(i) and (c)(ii) are water-soluble nonionic surfactants having a melting point of from 30 to 70°C.

It is undisputed and reported several times in the patent in suit itself that surfactants (in particular nonionic surfactants) can form gel phases during dissolution and impair the dissolution properties of a tablet (see paragraphs 4, 11 and 21).

Therefore, the subject-matter of claim 1, which encompasses the use of only nonionic surfactants as binders, cannot solve the technical problem indicated in the patent in suit throughout the extent of the claim.

Consequently, the Board finds that the technical problem underlying the invention can only be formulated as the provision of an alternative laundry detergent tablet containing nonionic surfactant as binder.

The Board has no doubt that this technical problem was solved by the subject-matter of claim 1.

1.1.3 Document (6) discloses compacted laundry detergent tablets containing as binder material between the detergent base powder particles nonionic surfactants having a preferred melting point above 35°C, for example up to 60°C, i.e. components of type (c)(i) and (c)(ii) according to granted claim 1 (see page 1, lines 11 to 13; page 3, lines 27 to 29; page 8, lines 21 to 30).

Moreover, this document teaches that highly preferred components of the compressed detergent tablets include surfactants, for example, anionic surfactants (see page 10, lines 29 to 30; page 15, lines 30 to 31 and page 18, line 4).

Therefore, it would have been obvious for the skilled person, by following the teaching of document (6), to incorporate in the detergent base powder an anionic surfactant and to prepare therewith a compressed tablet having all the technical features of claim 1 of the granted patent in suit.

The Board concludes that the subject-matter of claim 1 according to the main request lacks an inventive step.

2. *Respondents' auxiliary request*

2.1 Admissibility

After the discussion of the inventive step of the claims according to the main request during oral

proceedings, the Respondents filed an auxiliary request as a response to the arguments submitted for the first time by the Appellant as to a possible literal interpretation of the wording of claim 1, which interpretation was different from that used both in the grounds of appeal and in the decision of the Opposition Division.

The Appellant objected to the introduction of this request since it was belated and it could have been introduced beforehand in writing.

The Board remarks that the above mentioned literal interpretation of the wording of claim 1 (see point 1.1.2 above) was indeed submitted by the Appellant for the first time during oral proceedings.

Therefore, the filing of an auxiliary request for dealing with this late submission by the Appellant is justified under the circumstances of the case, in order to guarantee an equal fair treatment of both parties.

Moreover, this request did not modify the main point of discussion defined by the decision under appeal and by the statement of the grounds of appeal and did not raise issues which the Board or the Appellant could not reasonably be expected to deal with without adjournment of the oral proceedings (see Article 13(3) RPBA).

Therefore, the introduction of this request during oral proceedings cannot be considered to affect adversely the Appellant which sought to amend its case.

The Board concludes that, under consideration of the particular situation mentioned above, the auxiliary request submitted during oral proceedings is admissible.

2.2 Inventive step

2.2.1 Claim 1 of the set of claims according to the auxiliary request differs from claim 1 as granted only insofar as it specifies that the water-soluble organic material (c)(ii) is a polyethylene glycol.

The Board remarks that in such a claim the component (c)(ii) cannot be a nonionic surfactant (c)(i). Therefore, the arguments put forward in points 1.1.2 and 1.1.3 above do not apply any longer.

2.2.2 As regards the technical problem underlying the invention in the light of the closest prior art represented by document (6), the comparative tests contained in the patent in suit show that a tablet wherein the binder composition contains as component (c)(i) a C_{16}20EO nonionic surfactant, i.e. a type of surfactant described in document (6) (see page 4, lines 15 to 19), and as component (c)(ii) a polyethylene glycol in the amounts indicated in claim 1 has better dissolution properties and better hardness than a tablet comprising a binder consisting of 100% of the nonionic surfactant (c)(i).

In this respect there is no reason to assume, in the absence of any evidence, that the improvement in hardness shown in the table and amounting in some cases to 2 units only (see examples 2, 6 and B) is not significant, as alleged by the Appellant. Furthermore,

the ratio of hardness to dissolution is always greater in the tablets of the invention and is a sign of improved tablet properties as explained in the patent in suit (page 9, lines 1 to 2): "... A tablet with a high value of the strength/dissolution quotient has superior strength/dissolution properties than a tablet with a low strength/dissolution quotient." Moreover, there is also no reason to assume that a similar improvement would not be achieved throughout the whole extent of claim 1.

Therefore, the Board finds that the technical problem formulated in the description of the patent in suit as the provision of a laundry detergent tablet comprising a nonionic surfactant as component of the binder and showing nevertheless improved strength and dissolution/dispersion properties has been successful solved by means of the addition in the binder of a specified amount of polyethylene glycol having a melting point between 30 and 70°C.

2.2.3 As already explained above (point 1.1.2), it is undisputed that it was known at the priority date of the patent in suit that nonionic surfactants can form gel phases during dissolution and have a negative influence on the dissolution properties of the tablet.

Therefore, it would have been *prima facie* obvious for the skilled person, starting from the disclosure of document (6) and faced with the above technical problem, to replace at least part of the nonionic surfactant used as binder in that document with another known binder, which does not form gel phases during dissolution and has also good cohesive properties.

Moreover, since the nonionic binders of document (6) have a preferred melting point between 35° and 60°C, the skilled person would have looked for non-gelling binders having a similar melting point, which binders could be applied to the particulate base material in liquid form as the nonionic surfactants of document (6).

Such non-gelling binders were well known in the prior art and were already described in document (6) itself, which refers to document (10) (see page 2, lines 16 to 21 of document (6) and page 2, lines 37 to 42 and page 7, lines 33 to 34 of document (10)).

Since the preferred binders materials of document (10) are polyethylene glycols (see page 3, lines 47 to 49), it would have been obvious for the skilled person to try them as partial replacement of the nonionic surfactant binder of document (6) in order to improve the dissolution properties of the tablet.

Even though part of the detergent properties of the binder of document (6) would have been lost by the use of polyethylene glycols, as they have no detersive properties, the prior art did not contain any prejudice against the use in a tablet of binders not having detersive properties. To the contrary, document (8), which is earlier than document (6), confirms that it was obvious for a skilled person to use in a binder both type of components (see e.g. page 28, lines 11 to 13 and 18 to 19).

Furthermore, it was also known from document (10) that such polyethylene glycol binders have very good cohesive benefits and increase tablet strength (see

page 9, lines 27, 50 and 51 and page 12, lines 13 to 14).

The Board concludes that it would have been obvious for the skilled person, knowing the properties of such polyethylene glycols, to try them as a promising material for replacing part of the nonionic surfactant binder of document (6) with the expectation of increasing the strength and dissolution properties of the tablets.

2.2.4 As regards the amount of polyethylene glycols to be used in the binder composition, the Board remarks that the comparative tests contained in the patent in suit do not contain any example having amounts of polyethylene glycol outside the limits of claim 1 and the patent in suit does not claim any specific effect linked to the presence of a specific amount of such non-gelling binders.

Moreover, document (10) teaches to use such binders in a preferred amount of 0.1 to 10% by weight of the tablet (page 3, lines 51 to 52), i.e. an amount largely overlapping with the preferred amount for the nonionic surfactants used in document (6) of 0.5 to 10% by weight of the tablet (page 8, line 16).

Therefore, it would have been obvious for the skilled person to try similar amounts of the polyethylene glycol of document (10) and the nonionic surfactant of document (6), i.e. amounts in accordance with claim 1 according to the auxiliary request.

2.2.5 The Board concludes that the subject-matter of claim 1 according to the auxiliary request lacks an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

D. Magliano P.-P. Bracke