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**Datasheet for the decision  
of 4 March 2014**

**Case Number:** T 0472/12 - 3.3.06

**Application Number:** 04025351.0

**Publication Number:** 1498473

**IPC:** C11D17/04, B05D7/04

**Language of the proceedings:** EN

**Title of invention:**

Process for coating a water-soluble package and package coated  
by that process

**Patent Proprietors:**

Unilever PLC  
Unilever N.V.

**Opponent:**

The Procter & Gamble Company

**Headword:**

Powder coating / UNILEVER

**Relevant legal provisions:**

EPC Art. 52(1), 56, 114(2)  
RPBA Art. 13(1), 13(3)

**Keyword:**

Inventive step (main request and first, third and fourth  
auxiliary requests) : no  
Admissibility of late filed second auxiliary request : no

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
Boards of Appeal  
Chambres de recours**

European Patent Office  
D-80298 MUNICH  
GERMANY  
Tel. +49 (0) 89 2399-0  
Fax +49 (0) 89 2399-4465

Case Number: T 0472/12 - 3.3.06

**D E C I S I O N  
of Technical Board of Appeal 3.3.06  
of 4 March 2014**

**Appellant:** The Procter & Gamble Company  
(Opponent) One Procter & Gamble Plaza  
Cincinnati, Ohio 45202 (US)

**Representative:** Samuels, Lucy Alice  
Gill Jennings & Every LLP  
The Broadgate Tower  
20 Primrose Street  
GB-London EC2A 2ES (GB)

**Respondents:** Unilever PLC  
(Patent Proprietors) Unilever House  
Blackfriars  
London  
Greater London EC4P 4BQ (GB)

Unilever N.V.  
Weena 455  
3013 AL Rotterdam (NL)

**Representative:** Bristow, Stephen Robert  
Unilever Patent Group  
Colworth House  
Sharnbrook  
Bedford, MK44 1LQ (GB)

**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
15 December 2011 concerning maintenance of the  
European Patent No. 1498473 in amended form.**

**Composition of the Board:**

**Chairman:** B. Czech  
**Members:** L. Li Voti  
J. Geschwind

## Summary of Facts and Submissions

I. The present appeal by the Opponent is from the interlocutory decision of the Opposition Division posted on 15 December 2011 concerning maintenance of the European patent no. 1 498 473 in amended form.

II. In its notice of opposition the Opponent had sought revocation of the patent *inter alia* on the ground of lack of inventive step (Article 100(a) EPC 1973).

The documents cited in support of the opposition include the following:

D4: EP 0 479 404 A2;

D5: JP 01 029438 A and its English translation

D6: JP 48 076968 A and its English translation; and

D10: WO 00/55068 A1.

III. The Opposition Division decided at the oral proceedings of 10 November 2011 that the patent in the amended version with claims 1 to 9 according to the then pending main request, submitted during oral proceedings, complied with all requirements of the EPC.

In particular, the Opposition Division found in its decision that neither D4, taken as closest prior art, nor any of the other cited documents, taken alone or in combination, made the claimed process obvious.

IV. The sole independent claim 1 of the set of claims held allowable by the Opposition Division reads as follows:

"1. A method of powder coating a water-soluble package comprising a first sheet of water-soluble material moulded to form a body portion of the package, and a

*second sheet of water-soluble material superposed on the first sheet and sealed thereto by a closed seal along a continuous region of the superposed sheets, the package being formed by thermoforming envelopes or by a vertical form fill seal technique, the package comprising a fluent composition enclosed within a water-soluble package which method comprises dusting the package with a powder thereby depositing powder on at least a portion of an exposed surface of the package."*

- V. In his statement setting out the grounds of appeal, the Appellant (Opponent) submitted *inter alia* that the claimed subject-matter was not inventive. In support of this objection it filed as further evidence document

D17: "MODERN PACKAGING, September 1962, "New principles in vertical pouching".

According to one line of argument, D10 was to be considered as the closest prior art and dusting the PVA packages disclosed therein to reduce sticking was something obvious, as apparent from *inter alia* D17.

- VI. In their reply of 31 August 2012, the Respondents (Patent Proprietors) rebutted the objections raised and defended the patent in the version held allowable by the Opposition Division. However, with the same letter, they also submitted three sets of amended claims as auxiliary requests 1 to 3 and three documents (labelled D19 to D21) supposed to establish the nature of an ingredient referred to in D10.

- VII. In further written submissions, the Appellant, referring to comparative experimental evidence filed in both the opposition and the appeal proceedings, *inter*

*alia* called into question whether the intended reduction in stickiness was actually achievable across the whole breadth of claim 1.

- VIII. With a fax dated 21 February 2014, the Respondents
- filed three further documents labelled D22 to D24 supposed to evidence the properties ("hygroscopicity and inertness (or otherwise) of certain materials"),
  - submitted a new set of claims to be considered as second auxiliary request, and
  - resubmitted the previous second and third auxiliary requests as new third and fourth auxiliary requests, respectively.

Claim 1 according to the first auxiliary request differs from claim 1 according to the main request in that the wording "*the package comprising a fluent composition enclosed within a water-soluble package*" of the latter was amended to read "*the package comprising a fluent composition enclosed within **the** water-soluble package*" (highlight added by the Board) in the former.

Claim 1 according to the second auxiliary request differs from claim 1 according to the main request insofar as the final part of claim 1 was amended to read: "*which method comprises dusting the package with **an inert** powder thereby depositing **inert** powder on at least a portion of an exposed surface of the package.*" (emphasis added by the Board).

Claim 1 according to the third auxiliary request differs from claim 1 according to the main request insofar as the former claim ends with the additional wording: "*, the powder having an average particle size of between 5 and 15 microns.*".

Claim 1 according to the fourth auxiliary request differs from claim 1 according to the main request insofar as the former claim ends with the additional wording: "*, the powder having an average particle size of between 5 and 15 microns, and wherein the powder is deposited in an amount of from 0.5 to 10mg/100cm<sup>2</sup> on the exposed surface of the package.*".

IX. At the oral proceedings held before the Board on 4 March 2014, the debate focused on the issue of inventive step, also taking document D10 as the closest prior art. The admissibility of the second auxiliary request was also called into question by the Board.

X. The Appellant requested that the decision under appeal be set aside and that the patent be revoked.

The Respondents requested that the appeal be dismissed (main request) or, in the alternative, that the patent be maintained on the basis of the set of claims according to the first auxiliary request submitted with letter of 31 August 2012, or of one of the sets of claims according to the second to fourth auxiliary requests filed with letter of 21 February 2014.

XI. The arguments of the parties of relevance here can be summarised as follows:

As regards inventive step the Appellant argued that

- the technical problem underlying the invention with regard to the closest prior art, represented by the water-soluble polyvinyl alcohol (PVA) packages disclosed in document D10, consisted in the provision of a method for reducing the stickiness of such packages during storage;



- this technical problem was already known in the prior art; in fact, for example, document D4 taught that water-soluble packages might adhere to one another when stored in contact with one another under conditions of high humidity and that attempts to separate them might lead to rupture;

- moreover, it was well known in the prior art (documents D5, D6 or D17) to dust a water-soluble PVA film with a powder in order to reduce its stickiness during the preparation of articles or packages made of such films;

- therefore, it was obvious for the skilled person, faced with the technical problem mentioned above, to dust the external surface of a water-soluble package made of PVA films with a powder in order to reduce its stickiness;

- therefore, the subject-matter of claim 1 according to the Respondents' main request did not involve an inventive step;

- the additional features contained in the respective claims 1 according to the auxiliary requests had not been shown to provide any additional technical advantage; therefore, the subject-matters of these claims also did not involve an inventive step.

The Respondents submitted in essence that

- document D10 did not mention that the disclosed PVA packages were sticky and did not suggest to dust them;

- it was indeed known from the prior art, for example from document D17, to dust PVA films used for preparing

articles or packages in order to reduce their stickiness under unfavourable humidity conditions;

- but it was current practice in the prior art to pretreat a PVA film before the preparation of a package therefrom;

- moreover; the prior art was silent on problems due to stickiness which occurred when water-soluble packages were stored in close proximity to one another;

- therefore, in the light of the prior art teaching, the skilled person would have dusted the PVA films before preparing a package using such films but he would not have dusted the package itself after its formation;

- the subject-matter of claim 1 according to the main request thus involved an inventive step;

- as regards inventive step, the same arguments applied to the processes as defined in the claims according to the auxiliary requests.

## **Reasons for the Decision**

1. Procedural issues

1.1 Admissibility of document D17

1.1.1 D17, an article dated 1962 about technical aspects of the preparation of PVA pouches by a vertical form-fill-seal process, was submitted by the Appellant with its statement of the grounds of appeal in order to

- corroborate further its argumentation with respect to the known dusting of PVA films already submitted before the department of first instance.
- 1.1.2 The Board finds that the filing of D17 does not raise any new, let alone complex issue. Its filing was not objected to by the Respondents.
  - 1.1.3 Therefore, the Board decided to admit this document into the proceedings despite its late filing (Articles 114(2) EPC and 12(2), (4) RPBA).
  - 1.2 Admissibility of Respondents' first auxiliary request
    - 1.2.1 The Respondents' first auxiliary request was submitted in reply to the statement of grounds of appeal in the attempt to overcome objections raised by the Appellant on the basis of a specific interpretation of the wording of claim 1 according to main request.
    - 1.2.2 The Board finds that the amendment made to the wording of claim 1 is straightforward and raises no new, let alone complex issues. The late filing of this request was also not objected to by the Appellant.
    - 1.2.3 Therefore, the Board decided to admit this request into the proceedings despite its late filing (Articles 114(2) EPC and 12(2), (4) RPBA).
  - 1.3 Admissibility of Respondents' second auxiliary request
    - 1.3.1 This request was submitted by fax on 21 February 2014, i.e. eleven days before the date of the oral proceedings.

1.3.2 Claim 1 according to the second auxiliary request differs from claim 1 according to the main request in that the powder used for dusting is further specified to be an "***inert powder***" (emphasis added by the Board, see point VIII *supra*).

1.3.3 Considering that this claims request was filed at a very late stage of the appeal proceedings, its admission is at the discretion of the Board. In the exercise of its discretion the Board considered the following aspects:

Firstly, the incorporated feature "*inert*" does not stem from any of the dependent claims but was extracted from the description (see page 2, line 42 of EP 1498473 A1).

Secondly, in said fax of 21 February 2014 the Respondents merely stated, without any further explanation, that this request was "filed in direct response" to the "later submissions from the Appellant". The Board and the Appellant were thus left to speculate until the day of the oral proceedings concerning any possible corresponding argumentation.

Thirdly, this amendment raises at first sight new issues which had not been previously addressed. For example, considering that the term "*inert*" has a relative meaning which depends on the nature and properties of the materials involved and the effects to be ascertained by taking "*inert*" powders, the intended limitation, if any, of the claimed subject-matter is not immediately and clearly apparent. Therefore, for the Board, this amendment of claim 1 is not *prima facie* allowable.

1.3.4 Considering the very late filing in conjunction with the above aspects, the Board decided not to admit the second auxiliary request into the proceedings (Articles 114(2) EPC and 13(1), (3) RPBA).

1.4 Admissibility of Respondents' third and fourth auxiliary requests

1.4.1 These two requests, submitted by letter of 21 February 2014, are identical to the second and third auxiliary requests previously submitted with the Respondents' reply to the statement of grounds of appeal. The latter had been submitted in reply to the inventive step objections raised by the Appellant.

1.4.2 The Board finds that the amended claims 1 according to these requests narrow down in converging manner the ambit of claim 1 according to the main request, and that the amendments made do not raise any complex issue.

The late filing of these requests was not objected to by the Appellant.

1.4.3 Therefore, the Board decided to admit these requests into the proceedings despite their late filing (Articles 114(2) EPC and 12(2), (4) RPBA).

*Respondents' main request - Claim 1 - Inventive step*

2. Present invention

2.1 The present invention (see page 2, line 3 of the patent as granted and claim 1 at issue) relates to a method of powder coating a water-soluble package which

- comprises a first sheet of water-soluble material moulded to form a body portion of the package, and a second sheet of water-soluble material superposed on the first sheet and sealed thereto by a closed seal along a continuous region of the superposed sheets;
- is formed, in one embodiment, by thermoforming envelopes; and
- comprises a fluent composition enclosed within.

2.2 As regards the background and the issues dealt with by the invention, the description of the patent in suit contains the following indications.

In paragraphs [0004] and [0005]:

*"Generally, water-soluble packages suffer a number of disadvantages. First, as the packages are susceptible to moisture, the composition, which can be contained within the package, is limited. Secondly, the storage and transport of such packages must be carefully controlled as humidity in the atmosphere can weaken the structural integrity of the formed packages. It is an object of the present invention to overcome at least some of the above disadvantages."*

In paragraph [0006]:

*"It has been surprisingly discovered that water-soluble packages have a tendency to stick together when a number of them are stored in close proximity over a period of time. A further discovery of the applicants is that when a secondary package containing a plurality of such stuck-together packages is subjected to external impact, then the likelihood of the packages maintaining their integrity, ie not rupturing or breaking, is greater than when compared with the situation where the packages have not stick together."*

3. Closest prior art

3.1 For the Board, document D10 constitutes the closest prior art for the evaluation of inventive step. This was also common ground between the parties during oral proceedings. This document is considered as the most suitable starting point for the evaluation of inventive step of the claimed subject-matter since it relates to the provision of same kind of water-soluble packages as the patent in suit (see claim 1) and addresses specifically at least part of the issues addressed in the patent in suit (see paragraphs [0004] and [0006] of the patent in suit).

3.2 More particularly, according to document D10 (see "STATEMENT OF INVENTION" on page 3, lines 15 to 25), "*there is provided a water soluble package containing a fluid substance for release on dissolution of the package, characterised in that the package has a body portion for containing the substance comprising a first sheet of a water soluble material thermoformed to form a body wall of the body portion, and a second sheet of water soluble material superposed on the first sheet and sealed thereto along a continuous region of the superposed sheets to form a base wall of the body portion ...*".

Like according to the patent in suit, PVA films are the preferred package forming film materials of D10 (claims 6 and 7 and page 4, lines 23 to 25).

3.3 Moreover, document D10 expressly mentions some problems associated with the handling of such water-soluble packages. In particular, the description of D10 (page 2, line 24 to page 3, line 35) contains the following indications: "*The packaging and transport of water soluble packages containing fluid substances*

*subjects the formed packages to considerable impact forces. A particular problem is that when a number of such packages are loose packed in a larger container which is then transported, the impact forces suffered by the packages within the container can be severe. The difficulty is that in such a situation it only takes one package in the larger container to break for the whole product to be ruined as far as the consumer is concerned because the fluid contents of the broken package may leak over any unbroken packages. Consumer confidence in a product is likely to be badly damaged by such an occurrence.*

*The problem of minimising breakage to an acceptable level is particularly acute in the area of laundry detergents and other domestic consumer products and has not been solved until now.*

*It is an object of the invention to overcome at least some of the above disadvantages. It is a particular object of the invention to provide a water soluble package containing a fluid substance for release on dissolution of the package, which package has greater rupture resistance compared to known water-soluble packages."*

and

*"The applicants have surprisingly discovered that the above mentioned problems and disadvantages of prior art water soluble packages are substantially addressed by the packages according to the invention. In particular, the invention yields water soluble packages which are sufficiently robust to withstand (to a commercially acceptable level) the rigours of packaging and transport even when the fluid substance inside the package is a domestic consumer product such as a laundry detergent."*



4. Technical problem

At the oral proceedings the parties concurred that in the light of document D10 the technical problem can be seen in the provision of a method for reducing the propensity of the water-soluble packages to stick together when stored over a period of time or transported in close proximity to one another.

5. Solution

As a solution to this technical problem, the patent in suit proposes the method according to claim 1 at issue which is characterised in particular in that it *"comprises dusting the package with a powder thereby depositing powder on at least a portion of an exposed surface of the package"*.

6. Success of the solution

6.1 The examples contained in the patent in suit show that the dusting of water-soluble packages with a powder may, **at least under certain conditions**, bring about a significant reduction of the adherence of the water-soluble packages to each other. More particularly, it can be gathered from Table 1 of the patent that without dusting, the packages tested were rated *"4 - all sticking, but no damage when pulled apart"* irrespective of the storage conditions (duration, open/closed outer bag, temperature and relative humidity). Results observed with dusted packages varied from *"0 - no sticking"* to *"4 - all sticking, but no damage when pulled apart"* depending on the nature of the powder used and/or the storage conditions. However, none of the dusted packages exhibited a performance as poor as the one of the non-dusted packages, which were

- consistently rated "4" irrespective of the storage conditions.
- 6.2 The patent in suit contains no data as regards the likelihood of rupturing or breaking due to packages stuck together that is addressed in paragraph [0006] thereof. It is, however, plausible that under more severe conditions of storage and/or transportation, said likelihood will increase.
- 6.3 Taking into account only the information comprised in the patent in suit, i.e. without considering the experimental reports submitted by the Appellant, it can be concluded that the claimed subject-matter effectively solves the above mentioned technical problem. The following considerations of the Board are based on the acceptance, purely for the sake of argument and in favour of the Respondent, of the success of the claimed solution.
- 6.4 Obviousness
- 6.5 It remains to be assessed whether the skilled person, trying to solve the stated technical problem, would obviously have considered the claimed solution in the light of the prior art relied upon by the Appellant.
- 6.6 D10 teaches the preparation of thermoformed water-soluble packages having greater rupture resistance and made from PVA films (see page 3, lines 6 to 25 and page 4, lines 23 to 27). However, this document does not address the issue of stickiness of the packages made from such PVA films.
- 6.7 Nevertheless, it is undisputed that it was generally known before the effective filing date of the patent in

suit that PVA films used for preparing water-soluble packages are sticky, at least under unfavourable humidity conditions, and that their stickiness may be reduced by dusting them with a so-called anti-blocking agent in powder form.

This emanates from e.g. document D17 (third page, left column, lines 21 to 38), document D6 (translation, page 2, lines 16 to 18 and 22 to 24) and document D5 (translation, page 4, lines 10 to 12, 14 to 15 and 26 to 28).

6.8 Moreover, it emanates from document D4 (page 2, lines 16 to 18) that it was also known before the effective filing date of the patent in suit that the tackiness of sachets made from water-soluble film materials can cause problems when they are stored under conditions of high humidity, in the sense that the sachets may adhere to each other and attempts to separate them may lead to rupture.

6.9 For the Board, the skilled person encountering problems associated with stuck-together water-soluble packages made from PVA films as the ones disclosed in D10, and being aware of the generally known properties of PVA films, would immediately realise that the anti-blocking treatment, if any, to which the films were subjected before being formed into packages, could have been insufficient to prevent blocking of the final PVA packages upon storage, or its effect could have been lost in subsequent processing stages due to detachment of the powder as mentioned in e.g. documents D5 (page 4, lines 26 to 32) and D6 (page 2, lines 26 to 30).

6.9.1 In the Board's judgement, the skilled person, knowing that dusting with a powder was a method suitable for

reducing at least to some extent the stickiness of PVA films, and realising that such a dusting of the films previous to formation of packages therefrom does not always sufficiently prevent stickiness of the formed packages, would, by analogy, inevitably consider applying a dusting treatment to water-soluble packages made of the same material, i.e. such as the ones disclosed in D10, in order to reduce their propensity to stick together when stored or transported in close proximity to one another, irrespective of whether or not the PVA films had already been dusted once previously. Proceeding in this manner, the skilled person would thus arrive at a method falling within the terms of claim 1 without a need for inventive ingenuity.

- 6.10 Therefore, the subject-matter of claim 1 according to the Respondents' main request does not involve an inventive step (Articles 52(1) and 56 EPC).

*Respondents' first auxiliary request - Claim 1 - Inventive step*

- 6.11 Claim 1 according to the first auxiliary request differs from claim 1 according to the main request insofar as it contains the amended wording "*the package comprising a fluent composition enclosed within **the** water-soluble package*" (highlight added by the Board) instead of "*the package comprising a fluent composition enclosed within a water-soluble package*".

- 6.12 This claim 1 was filed by the Respondents in order to exclude what they consider to be a possible broader (mis-)interpretation of claim 1 according to the main request, i.e. to make it clear that the "package" referred to at two instances in claim 1 is one and the same.

6.13 The Board's considerations having regard to the issue of inventive step in respect of the main request are actually based on this narrower understanding as expressed by claim 1 at issue. Therefore, they likewise apply to claim 1 at issue.

6.14 Hence, for the same reasons given above with respect to claim 1 according to the main request, the subject-matter of claim 1 according to the Respondents' first auxiliary request does not involve an inventive step (Articles 52(1) and 56 EPC).

*Respondents' third and fourth auxiliary requests - Claims 1 - Inventive step*

6.15 The independent claims 1 according to the third and fourth auxiliary requests differ from claim 1 according to the main request in that they additionally comprise the following appended features, stemming from claims 5 and 8 as granted, respectively:

*"the powder having an average particle size of between 5 and 15 microns"* (third auxiliary request)

or

*"the powder having an average particle size of between 5 and 15 microns, and wherein the powder is deposited in an amount of from 0.5 to 10mg/100cm<sup>2</sup> on the exposed surface of the package"* (fourth auxiliary request).

6.16 The nature of these amendments does not require departing from considering document D10 as the closest prior art. This was undisputed.

- 6.17 No additional, let alone unexpected, technical advantage attributable to said added features concerning the average particles size or deposited amount of the powder was invoked and made credible by the Respondents. Hence, the technical problem is still the same as the one identified above (see point 4 *supra*) in connection with claim 1 according to the main request.
- 6.18 As regards the question of obviousness, the considerations under point 6.9.1 *supra* apply likewise in respect of the two auxiliary requests at issue: It would have been obvious for the skilled person to dust the external PVA surface of the packages disclosed in document D10 with a powder in order to reduce their propensity to stick to each other when stored or transported in proximity.
- 6.18.1 The average size and the amount of the powder particles to be applied as a coating to the exposed surface of the package in accordance with the claims 1 at issue appear to at least greatly overlap with usual ranges of particle size and of amount of particles used in the prior art for powder-coating PVA films in order to reduce their stickiness. For example, document D5 (see translation, page 3, claim; page 5, lines 7 to 11) mentions fine powders of *inter alia* talc or starch having a mean particle diameter in the range of from 0.5 to 100 microns to be deposited in amounts of from 2 to 30 mg/100cm<sup>2</sup> (0.2 to 3.0 g/m<sup>2</sup>) on the surface of the PVA film as anti-blocking agents. Using deposited amounts and particles diameters in the ranges according to claim 1 at issue was thus an option readily available to the skilled person.

6.18.2 In the Board's judgement, the skilled person carrying out the dusting of the PVA surface of a package according to D10 would thus, based on common sense considerations and, if necessary at all, on routine tests, easily identify and optimise (as regards effectiveness versus poor adherence to package; see e.g. D5/translation, page 5, penultimate paragraph) suitable minimum and maximum amounts of dusting powder without inventive skill and would thereby arrive at a process falling within the terms of the respective claims 1 according to the two request at issue.

6.19 Therefore, the Board concludes that the subject-matters of the respective claims 1 according to the third and fourth auxiliary requests do not involve an inventive step either (Articles 52(1) and 56 EPC).

*Conclusion*

7. None of the Respondents' requests is both admissible and allowable.

**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

B. Czech

Decision electronically authenticated