

**Internal distribution code:**

- (A)  Publication in OJ  
(B)  To Chairmen and Members  
(C)  To Chairmen  
(D)  No distribution

**Datasheet for the decision  
of 30 September 2009**

**Case Number:** T 0724/07 - 3.2.06

**Application Number:** 00914113.6

**Publication Number:** 1161587

**IPC:** D06F 39/02

**Language of the proceedings:** EN

**Title of invention:**

A process for producing a water-soluble package

**Patentee:**

Appellant I: Unilever PLC, et al

**Opponent:**

Appellant II: Henkel AG & Co. KGaA

Other party: Reckitt Benckiser PLC

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 83, 84, 123(2), 56

**Relevant legal provisions (EPC 1973):**

-

**Keyword:**

"Enabling disclosure (yes)"

"Claims - clarity (yes)"

"Amendments - added subject-matter (no)"

"Inventive step - (no, general technical knowledge)"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 0724/07 - 3.2.06

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.06  
of 30 September 2009

**Appellant I:**  
(Patent Proprietor)  
Unilever PLC  
Unilever House  
Blackfriars  
London  
Greater London EC4P 4BQ (GB)

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

**Appellant II:**  
(Opponent)  
Henkel AG & Co. KGaA  
VTP Patente  
D-40191 Düsseldorf (DE)

**Representative:**  
Stevermann, Birgit  
Henkel AG & Co. KGaA  
VTP Patente  
D-40191 Düsseldorf (DE)

**Other Party:**  
(Opponent)  
Reckitt Benckiser PLC  
103-105 Bath Road  
Slough  
Berkshire SL1 3UH (GB)

**Representative:**  
Bowers, Craig Malcolm  
Reckitt Benckiser  
Corporate Services Limited  
Legal Department - Patents Group  
Dansom Lane  
Hull HU8 7DS (GB)

**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
18 April 2007 concerning maintenance of  
European patent No. 1161587 in amended form.

**Composition of the Board:**

**Chairman:** P. Alting van Geusau  
**Members:** G. de Crignis  
K. Garnett

## Summary of Facts and Submissions

- I. European Patent No. 1 161 587, granted on application No. 00 914 113.6, was maintained in amended form by decision of the opposition division posted on 18 April 2007.
- II. The opposition division held that the patent in suit disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC), but found that the subject-matter of claim 4 in accordance with the patent proprietor's main request was not novel (Article 54 EPC) over the disclosure in each one of documents

E1: US-A- 38 08 772;

E6: WO-A-92/17382; or

E7: "Technology of Thermoforming" James L. Throne, Carl Hanser Verlag Munich 1996, pages 46 - 53, 284 - 289, 316, 317, 404 - 405.

Concerning the first auxiliary request, the opposition division came to the conclusion that the subject-matter of its claim 1 did not involve an inventive step (Article 56 EPC) with regard to the disclosure of

E12: DE-B-1145087

when taken in combination with the teachings of E7; and also with regard to the disclosure of E1 when taken in combination with the teachings of E12. With regard to the second auxiliary request, the requirements of the EPC were considered to be met.

- III. The appellant-patent proprietor filed a notice of appeal against this decision on 3 May 2007 and paid the appeal fee simultaneously. On 28 August 2007 the statement of grounds of appeal was filed together with a main and auxiliary request and, additionally, oral proceedings were requested.
- IV. The appellant-opponent (opponent OI) filed a notice of appeal against the decision on 15 June 2007, and paid the appeal fee simultaneously. On 27 August 2007 the statement of grounds of appeal was filed. It was argued that the invention of the patent in suit was not sufficiently disclosed, that the subject-matter of claim 1 as maintained by the opposition division contravened Article 123(2) EPC and was not based on inventive step (Article 56 EPC). It requested that the patent be revoked and also oral proceedings.
- V. In a communication dated 23 April 2009 accompanying the summons to oral proceedings, the Board indicated that the requirements of Articles 83 and 123 EPC appeared to be met. However, with regard to the assessment of inventive step it appeared that, applying an objective problem/solution approach, the subject matter lacked an inventive step.
- VI. Oral proceedings were held on 30 September 2009. The appellant-opponent requested that the decision under appeal be set aside and that the patent be revoked. The other party (opponent II) made the same request.

As announced with its letter of 26 August 2009 the appellant-patent proprietor did not attend the oral

proceedings. In this letter it had confirmed its requests that the patent be maintained according to the main request or, alternatively on the basis of the auxiliary request as filed with the statement of grounds of appeal, and, further, it requested that the proceedings be continued in writing.

Claim 1 according to the main request, which is identical to claim 1 as granted, reads as follows:

"A process for producing a thermoformed package comprising the steps of

- placing a first sheet of film over a forming die having at least one cavity;
- heating the film to mould the film into the at least one cavity thereby forming at least one recess in the film;
- placing a composition in the at least one formed recess; and
- sealing a second sheet of film across the at least one formed recess to produce at least one closed package,

the process being characterised in that the at least one cavity is cooled."

Claim 1 according to the auxiliary request, which is the form in which the patent was ordered to be maintained by the opposition division, reads as follows:

"A process for producing a thermoformed water-soluble package comprising the steps of

- placing a first sheet of water-soluble film over a forming die having at least one cavity;

- heating the water-soluble film to mould the water-soluble film into the at least one cavity thereby forming at least one recess in the water-soluble film;
- placing a composition in the at least one formed recess; and
- sealing a second sheet of water-soluble film across the at least one formed recess to produce at least one closed package,

the process being characterised in that the at least one cavity is cooled to between 2 and 10 degrees C."

VII. In support of its requests the appellant-opponent argued essentially as follows (the other party (opponent OII) presented the same arguments):

Concerning sufficiency, it was not disclosed where to determine the temperature of the cavity. Additionally it was not clear whether the cooling was to be applied temporarily or continuously. The subject-matter of claims 2 and 3 specified the cooling with regard to a certain temperature range or a specific temperature. In such case it would be necessary to know where, when and how to determine the claimed range or specific temperature. No information in this respect was disclosed. This objection concerned the main request and to an even larger extent the auxiliary request, where this feature was included in claim 1.

The subject-matter of claim 1 of the auxiliary request did not meet the requirements of Article 123(2) EPC. Nowhere in the application as filed was a process concerning a water-soluble package having water-soluble first and second films disclosed. The reference in the introductory statement of the patent in suit to a



process for producing a water-soluble package referred to a package which contained a detergent. This latter feature was not included in claim 1. Accordingly, no disclosure for a water-soluble package independent of its content was present. Although the first film was disclosed as being water-soluble, no such general disclosure was present for the second film.

Concerning inventive step, either E1 or E6 could be considered as representing the closest prior art.

E1 disclosed a process wherein a first film was heated and moulded in cavities. With regard to the cavities, cooling was suggested. The moulded structures were filled and sealed. E1 referred to a heating station in front of the moulding station. However, no effect resulted from or was reported for such different sequence of steps. Accordingly, it was an obvious alternative process.

E6 disclosed in its claims and example 1 a process which did not specify whether the heating and thermoforming took place at the same position or not. No particular cooling step was referred to. The reference in the final sentence of example 1 to room temperature did not relate to the cavity being cooled but to the production as such. Claims 26 to 30 of E6 referred to the process steps. Thermoforming in claim 30 was not referred to with particular regard to the position of the heating step.

Accordingly, the subject-matter of claim 1 differed perhaps in the specification of the sequence of the method steps and in the necessity of the cavities being

cooled. The fact that the skilled person would consider cooling of the cavities was acknowledged in the description of the patent in suit as representing basic knowledge in the art. The sequence of the method steps could be adapted by the skilled person in an alternative way consistent with the view set out for E1.

With regard to the auxiliary request, which specified in its claim 1 additionally that the cooling temperature was in the range of between 2 and 10°C, the arguments above applied as well. No particular effect was linked to the claimed temperature range. Therefore, the skilled person considering cooling could choose any cooling range arbitrarily or according to the desired cooling characteristics.

The further amendment in claim 1 of the auxiliary request referring to a water-soluble package and film sheets for both the first and the second sheet of film did not overcome the above considerations, as the example 1 in E6 disclosed a first and a second sheet of polyvinyl alcohol. Moreover, this amendment did not meet the requirements of Article 84 EPC in view of the fact that water solubility was not an absolute term. In particular there were polyvinyl alcohols known which were not water soluble at all. Hence, the claims of the auxiliary request did not meet the requirements of Articles 123(2) EPC, 84 EPC or 56 EPC.

Accordingly, neither the subject-matter of claim 1 of the main request nor that of the auxiliary request was based upon an inventive step.

VIII. The appellant-patent proprietor in its written submissions relied upon the following arguments:

Concerning the objections under Article 83 EPC, differences in the temperature might occur depending on where it was measured. However, the skilled person would be able to judge where to take the reading in order to obtain a sensible determination.

Concerning the auxiliary request and the objection under Article 123(2) EPC, the whole patent in suit was concerned with a water-soluble package having water-soluble films.

Concerning inventive step, E12 did not represent an appropriate starting point for the assessment. E1 should be considered as the closest prior art. The features distinguishing the subject-matter of claim 1 of the auxiliary request from this teaching were the water-soluble film, heating the film over the cavity and then cooling the cavity to between 2 and 10°C.

The problem to be solved was the prevention/hindering of shrink-back and consequential spillage of the contents onto the sealing area of the recesses. Such problems were not recognized by the prior art. The prior art documents were concerned with increasing throughput on production lines but did not mention seal contamination. The claimed process had a technical effect as commercial production lines were currently running which are benefiting from it.

## Reasons for the Decision

1. The appeal is admissible.
2. *Sufficiency (Article 83 EPC)*

The subject-matter of claim 2 of the main request and of claim 1 of the auxiliary request refers to cooling the cavity to between 2 and 10°C. The subject-matter of claim 3 of the main request and of claim 2 of the auxiliary request refers to cooling to "approximately" 8°C. Accordingly, certain temperature variations during the process are allowed.

It is true that the patent in suit discloses neither any specific location nor the time or manner for the measurement or calculation of the cooling of the cavity. It merely states in paragraph [0015]: "Means for cooling the cavities will be well-known to the skilled in the art."

It was not argued by the appellant and the other party that the cooling of the cavities gave rise to any sufficiency objection; rather, it was only the temperature determination of the cavity which was problematic in this respect.

However, considering that the cooling of the cavities, for example by means of cooling ducts in a cavity casting is a well-known measure to force-cool a cavity, the Board sees no difficulty in arriving at a chosen temperature of such a casting and cavities. In the environment in which the process is carried out (about room temperature) and at the temperatures involved, a

steady state temperature of the casting and cavity will be sufficiently close to the temperature of the cooling medium running through the cooling ducts. Given also that the heat capacity of the film is obviously very small in comparison to that of the casting and cavity, even during a continuous process the skilled person would be well able to adjust the cooling medium flow to maintain the casting and cavity at a chosen temperature.

Accordingly, means for cooling and the knowledge of how, where and when to determine the temperature of the cavities are included in the general technical knowledge of the skilled person and therefore it is not necessary to include further instructions in the patent specification. The fact that such determination will be more complex in case of a large number of cavities does not render it impossible. The requirements of Article 83 EPC are met.

3. *Inventive step (Article 56 EPC) - Main request*

3.1 E1 relied upon by the appellant-proprietor as representing the closest prior art discloses a process for producing a thermoformed package (Figures 1 to 3). According to the process steps which are disclosed, the material web is heated and advanced into the moulding station at constant speed (col. 6, l. 14 - 29). The material is pressed into the moulding cavities (col. 6, l. 52). The lower mould part may be cooled in order to achieve fast hardening or stabilization of the soft synthetic material (col. 6, l. 64 - 66). After filling the containers, a foil is sealed to close them (col. 7, l. 25 - 30).

- 3.2 The point in dispute was whether in E1 a feature is disclosed which corresponds to the feature in claim 1 of the patent in suit, namely "heating the film to mould the film into the at least one cavity thereby forming at least one recess in the film". The term "thereby" means that this feature is to be interpreted such that the heating and the moulding of the film into the cavity take place at the same process station.
- 3.3 Although it is necessary for a film to be heated before it can be moulded, these steps can operationally and structurally be either separate or combined. The teaching of E1 clearly refers to consecutive steps in this respect, being shown in its Figures 1 to 3, where a heating station 15 is placed in front of a moulding station 16. The forming of the recesses is carried out by pressing the material web into the mould cavities via the use of compressed air (col. 6, l. 46 - 66).
- 3.4 The problem referred to by the patent proprietor - avoidance of shrink back and preventing spillage of the composition - is solved neither by the sequence of the forming/moulding step nor by the cooling. The problem is solved by the application of a vacuum, which is acknowledged in the corresponding description of the patent in suit (see paragraphs [0008, 0021]). Accordingly, this problem does not represent the objective problem and the problem/solution approach cannot be based on it.
- 3.5 When starting from the embodiment shown in Figures 1 to 3 of E1, the objective technical problem to be solved is to optimize the process steps. The solution

- according to claim 1 is to heat and mould the film in a combined operational position.
- 3.6 The skilled person in the art of thermoforming knows that the film to be processed has to be heated. Usually pre-heating is carried out to a degree which still allows appropriate handling of the film. Heating of the film in order to mould it includes heating it to a temperature above the glass transition point, when processing of the film starts to be more difficult. Accordingly, heating to such a degree will be limited to the shortest possible time and extent of the production line. In particular for film thicknesses in the micrometer range, such considerations are necessary in order to obtain correct handling of undamaged film layers.
- 3.7 Different manners of heating the film material are known and can be applied. The embodiment shown in Figures 1 to 3 of E1 provides a heating station consisting of two heated plates which are movable towards each other and which plates touch the material web on either side as they are moved towards each other. In the alternative to such contact heating, E1 suggests radiation (col. 7, l. 55 - 60) as well as the carrying of the heating plates on the mould parts on one carriage (col. 7, l. 64 - 66).
- 3.8 Therefore, although the teaching of E1 discloses mainly contact heating in a separate process step before moulding, it gives the hint that, if desired, heating can be carried out in subsequent steps or the order of steps could be different. In any case, the patent in suit neither mentions special advantages or specific

technical effects resulting from the claimed combined position of the heating and moulding step. The fact that E1 points to such an alternative leads to the conclusion that such an approach was well-known in the art and does not involve an inventive step. Hence, the requirements of Article 56 EPC are not met.

- 3.9 Although E6 is a document which is also suitable as representing the closest prior art for the subject-matter of claim 1 of the main request, in the circumstances it is not necessary to consider the second line of argument of the appellant and other party of lack of inventive step starting from this document as a starting point.

#### 4. *Auxiliary request*

##### 4.1 Amendments - Articles 123(2) EPC

- 4.1.1 The subject-matter of claim 1 as originally filed and as granted was amended by including that the package, the first sheet of film and the second sheet of film are water-soluble. Additionally, the subject-matter of originally filed (and granted) claim 2 ("the at least one cavity is cooled to between 2 and 10 degrees C") was included. The latter feature does not give rise to any issue of added subject-matter.

- 4.1.2 Support for the package being water-soluble can be found in the title of the originally filed PCT-publication and in the example which is disclosed on page 9. Support for the first sheet of film being water-soluble can be found on page 6, lines 34/35 and



in the example on page 8, line 12. These disclosures were also not disputed.

4.1.3 Support for the second sheet of film being water-soluble can be found in the example on page 9, line 19. The appellant-opponent was of the view that this support was not sufficient as it referred to a particular example and did not provide general disclosure with regard to the second sheet of film.

4.1.4 However, it is to be noted that in accordance with the "statements of invention" starting on page 3, line 7 until page 7, line 29, the reference on page 6, line 34/35 refers to the film being a water-soluble film. This reference is to any film used in the embodiment discussed there. This embodiment refers to a completely water-soluble package - something that is now specified in the claim - and no example of any other film is disclosed in the patent in suit. Therefore, the skilled person would not conclude that a different material should be used for the second film.

Accordingly, the requirements of Article 123(2) EPC are met.

#### 4.2 Amendments - Clarity

4.2.1 With regard to the reference of the appellant-opponent to the fact that polyvinyl alcohol is not necessarily water soluble it is to be noted that the example refers to polyvinyl alcohol and this material is specified as a preferred film material for water soluble films. Although it is correct that polyvinyl alcohol films exist which are not water soluble, the passage on

page 6, lines 34/35 clarifies that only such polyvinyl alcohol films which are water soluble are to be considered as being within the scope of the patent in suit.

Accordingly, the requirements of Article 84 EPC are met.

#### 4.3 Inventive Step

4.3.1 E6 is considered as representing the closest prior art because it relates to water-soluble packages made by thermoforming polyvinyl alcohol films.

4.3.2 In particular, E6 discloses a process for producing a thermoformed water-soluble package (claims 26 to 30). It refers to thermoforming water soluble polyvinyl alcohol sheets into a mould using a temperature of 90°C (page 17, l. 3 - 18). A composition is placed in the recess formed by the deformation and a second sheet of polyvinyl alcohol is placed across the recess and heat sealing is performed using a sealing temperature of 180°C (example 1) or 200°C (example 2). Both examples refer to the production being carried out at 21°C (RT) and 38% RH. E6 can be taken as representing the closest prior art even though the production temperature of 21°C is not referred to as being achieved by active cooling of the cavities.

4.3.3 Accordingly, the disclosure of E6 differs from the subject-matter of claim 1 in that, firstly, no particular disclosure with regard to the position of the heating step for the thermoforming is present and, secondly, E6 does not disclose the feature of the at least one cavity being cooled "to between 2 and 10 degrees C".

- 4.3.4 Considering the choice of the position of the heating step in the thermoforming process, in consistency with the discussion in E1 above, such position can freely be chosen according to the available process means and adapted according to the desired process parameters. No particular choice is disclosed in E1 and accordingly all alternatives can be used by the skilled person. The claimed combined heating/moulding station does not provide any technical benefit and the choice of such a combined station is therefore arbitrary.
- 4.3.5 It remains to be discussed whether the feature of cooling the cavity to between 2 and 10°C involves an inventive step.
- 4.3.6 The objective technical problem underlying this feature can only relate to the provision of means for achieving relatively fast hardening or stabilization of the synthetic material used for the film.
- 4.3.7 Accordingly, the choice has to be purposive and depends on the materials involved. In the absence of any correlated influences or surprising effects, the specification of cooling to between 2 and 10°C is an arbitrary measure and not related to any purposive selection other than cooling to a temperature which allows for quick hardening of the formed film. Such purpose is plainly obvious in a method of thermoforming a package.
- 4.3.8 Accordingly, the subject-matter of claim 1 lacks an inventive step (Article 56 EPC).

5. With its letter dated 26 August 2009 the patentee stated that it would not be attending the oral hearing and requested that the proceedings be continued in writing.

However oral proceedings had also been requested by Opponent I so that to have continued the proceedings in writing would have meant denying Opponent I the right to be heard in oral proceedings, contrary to Article 116(1) EPC. The Board therefore decided to refuse the patentee's request to continue the proceedings in writing, and decided the case during the oral proceedings on 30 September 2009.

## **Order**

### **For these reasons it is decided that:**

1. The decision is set aside.
2. The patent is revoked.

The Registrar

The Chairman

M. Patin

P. Alting van Geusau