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D E C I S I O N
of 25 November 2002

Case Number: T 0155/98 - 3.3.7

Application Number: 87304792.2

Publication Number: 0247898

IPC: B32B 27/32

Language of the proceedings: EN

Title of invention:
Sealable films

Patentee:
ExxonMobil Chemical Patents Inc.

Opponent:
Hoechst Aktiengesellschaft

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Novelty (yes)"
"Inventive step - yes (after amendment)"

Decisions cited:
T 0125/93

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0155/98 - 3.3.7

D E C I S I O N
of the Technical Board of Appeal 3.3.7
of 25 November 2002

Appellant: (Proprietor of the patent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 15 December 1997 revoking European patent No. 0 247 898 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: R. E. Teschemacher
Members: B. J. M. Struif
B. L. ter Laan

Summary of Facts and Submissions

I. The mention of the grant of European patent No. 0 247 898 with respect to European patent application No. 87 304 792.2, claiming priority of GB 8 613 161 dated 30 May 1986, was published on 22 November 1990, on the basis of fifteen claims, claim 1 being the only independent claim and reading as follows:

"A film comprising a base layer which comprises 70 to 97 weight % of a polyolefin and 3 to 30 weight % of a resin having a molecular weight lower than that of the polyolefin, said layer having on at least one surface thereof 1 to 20 weight % based on the weight of the base layer, of a film layer consisting of a copolymer of 80 to 99 weight % of propylene and 1 to 20 weight % of ethylene, characterised in that the resin has a softening point of from 120 to 180°C."

II. A notice of opposition was filed on 21 August 1991, in which the revocation of the patent in its entirety was requested on the grounds under Article 100(a) (lack of novelty and lack of inventive step) and 100(c) EPC. The opposition was supported *inter alia* by the following documents:

D1: EP-A-0 217 388

D3: GB-A-2 028 168

In the oral proceedings before the opposition division Article 100(c) EPC was not maintained as a ground for opposition.

III. In a first decision of the opposition division, issued in writing on 4 December 1992, the patent was maintained in amended form.

IV. A notice of appeal against that decision was filed by the opponent. With the statement setting out the grounds of appeal dated 8 April 1993, the opponent filed a test report. By letters dated 15 October 1993 and 10 April 1995, the patentee also filed test reports. Furthermore, they submitted a new document together with its English translation:

D5: JP-A-60-210 647 (Serial No. 59-66 532 to which the English translation refers)

In decision T 125/93, dated 4 December 1996, the then competent board admitted document D5 to the proceedings and remitted the case to the opposition division for further prosecution.

V. In a second decision of the opposition division issued in writing on 15 December 1997, the patent was revoked. That decision was based on a set of fifteen claims, claim 1 reading:

"A film comprising a base layer which comprises 70 to 97 weight % of a polyolefin and 3 to 30 weight % of a resin having a molecular weight lower than that of the polyolefin **and a softening point of from 120 to 180°C,** said layer having on at least one surface thereof 1 to 20 weight % based on the weight of the base layer, of a film layer consisting of a copolymer of 80 to less than 98 weight % of propylene and more than 2 to 20 weight % of ethylene, **those films being excluded which comprise a base layer of polypropylene**

with an E-modulus according to DIN 53 457 of at least 3000 N/mm^2, measured in both directions of molecular orientation, and on at least one surface thereof a layer containing 0.3 to 1.5 weight % of a polydialkylsiloxane." (emphasis added on the differences from claim 1 as granted).

In claim 12 as granted the terms "less than" before the number "98" and "more than" before the number "2" were introduced.

The opposition division held that:

(a) The claimed subject-matter met the requirements of Article 123(2) and (3) EPC.

(b) The subject-matter of claim 1 was novel.

(c) Regarding inventive step, D5 was considered to be the nearest prior art document. Example 1 of D5 described a three layer laminate structure from which claim 1 differed only in that the comonomer content was "more than 2 %". As this difference had not been shown to be critical for the desired properties, the problem underlying the invention was seen as to provide an alternative film laminate with essentially the same properties. The claimed solution was regarded as obvious over D5 alone or in combination with D3.

VI. A notice of appeal against the above decision was filed on 9 February 1998 by the patentee (appellant), the prescribed fee being paid on the same day. In the statement of grounds of appeal filed on 15 April 1998 the appellant maintained the claims as revoked by the

opposition division as the sole request.

By letter dated 5 November 2001, the appellant filed four auxiliary requests and an experimental report. By letter of 25 October 2002, those auxiliary requests were replaced by new auxiliary requests 1 to 7. By letter of 12 November 2002, the appellant filed further amended groups of claims identified as alternatives A to D, each alternative including a main request and nine auxiliary requests.

VII. In a first communication of 5 August 2002, the board addressed the points to be discussed during the oral proceedings, including the admissibility of the disclaimers in the main request. In a further communication dated 6 November 2002, the board pointed to the question of the validity of the priority having regard to prior art document D1 in relation to Article 54(3) EPC.

VIII. Oral proceedings were held on 25 November 2002 in the absence of the respondent who had informed the board by telephone that they would not be attending (Rule 71(2) EPC). During the oral proceedings the appellant submitted an amended set of claims 1 to 15, claim 1 reading as follows:

"Use in heat seal packaging of a film comprising a base layer which comprises 70 to 97 weight % of a polyolefin and 3 to 30 weight % of a resin having a molecular weight lower than that of the polyolefin and a softening point of from 120 to 180°C, said layer having on at least one surface thereof 1 to 20 weight % based on the weight of the base layer, of a heat sealing film layer consisting of a copolymer of 80 to 99 weight % of

propylene and 1 to 20 weight % of ethylene."

The dependent claims were also reformulated to use claims.

IX. The appellant argued in substance as follows:

(a) As to the admissibility of the amendments, the change of category from product claims to use claims was allowable in view of established case law. The amendments in claim 1 were supported by the application as filed.

(b) In view of the contents of the priority document, the patent in suit was entitled to its priority.

(c) As regards novelty, D1 disclosed a twist wrapping film having a top layer which contained a polydialkylsiloxane whilst the film now being used had a heat sealing layer consisting of a copolymer of propylene and ethylene. The seal layer of the film according to D5 was different.

(d) As regards inventive step, D3, which dealt with heat sealing properties of packaging films, was considered to be the closest state of the art. The problem underlying the patent in suit was to provide a packaging film having improved heat sealing properties, in particular, a film having a lower heat seal initiation temperature. This film could be sealed at lower temperatures and on heat sealing machines operated at higher speeds. Furthermore, the appellant referred to their test reports to demonstrate an improved technical effect vis à vis D3 and D5. In the examples of D3,

the temperatures and closure times were too high to uncover the heat sealing effects.

The beneficial effect of a specific hydrocarbon resin in the core layer on heat sealability was not foreshadowed by any of the available prior art documents. D5 addressed film properties other than heat sealability, such as barrier properties, and hence did not relate to the problem posed. In D1 the propylene-ethylene copolymer functioned as a carrier layer for incorporating the polydialkylsiloxane therein and it no longer provided a sufficient heat sealability.

Consequently, these documents provided no incentive for the skilled person seeking to improve heat sealability. Thus, the claimed subject-matter involved an inventive step.

X. The arguments of the respondent, in so far as they still apply to the claims filed during the oral proceedings, can be summarized as follows:

(a) As regards novelty, D1 and D5 remained relevant.

(b) Regarding inventive step, D5 was considered to be the closest state of the art. Since the problem of the patent in suit not only related to heat sealability but also to the improvement of other properties also aimed at in D5, a common partial problem existed. The only difference over D5 was the higher content of ethylene in the copolymer of the heat sealing layer. Since no technical effect had been shown for said difference, an inventive step was not established. Because the softening

point of the resin in the core layer was already known from D5, this feature could not contribute to an inventive step. Furthermore, films with a top layer of a propylene-ethylene copolymer having an ethylene content higher than that disclosed in D5 were generally known in heat seal packaging films. Having regard to the addition of a resin to a heat seal film, reference was also made to US-A-4 230 767 (D7).

Thus, the claimed subject matter did not involve an inventive step.

XI. The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the sole request as submitted during the oral proceedings. All previous requests were withdrawn.

The respondent had requested in writing that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible

Amendment

2. The change of category from product claims to use claims is supported by the application as originally filed page 2, lines 1 to 3, and allowable under Article 123(3) EPC according to established jurisprudence (Case Law of the Boards of Appeal of the European Patent Office, 4th edition 2001, III.B.4).

The further amendments are supported by the application as filed page 1, lines 1 to 3, page 4, lines 12 to 17, and the example, page 6, lines 2 to 4.

Consequently, the amendments meet the requirements of Article 123(2) and (3) EPC.

Priority

3. Since the board has come to the conclusion that the claimed-subject matter is novel and inventive also when taking into consideration D1 as state of the art (see points 4 and 5 below), there is no need to consider the validity of the priority.

Novelty

4. The respondent had argued lack of novelty with respect to D1 and D5.

4.1 D1 discloses a transparent polypropylene film for twist wrapping coated on one of both surfaces and produced by coextrusion, wherein the base layer of polypropylene additionally contains a low molecular weight hydrocarbon resin in an amount of 10 to 40 wt.-%, based on the entire weight of polypropylene and the resin, the base layer of polypropylene having an E-modulus of at least 3000 N/mm^2, measured in both directions of molecular orientation, and wherein the top layer or top layers contain(s) 0.3 to 1.5 weight-% of a polydialkylsiloxane based on the weight of the top layer(s) (claim 1). The resin of the base layer has a softening point of 60 to 180°C, preferably from 80 to 130°C (claim 3). The top layers may be sealable or non-sealable. The heat sealable layer(s) can include

ethylene homopolymers, a copolymer of propylene containing at most 10 weight-% ethylene based on the copolymer, a copolymer of propylene and 10 to 15 weight-% butene-1 based on the copolymer, a terpolymer of propylene, ethylene and an alpha-olefin having 4 to 10 carbon atoms, or a mixture thereof (column 3, line 39 to column 4, line 3).

In Example 1, a film with a base layer of polypropylene containing 25 weight-% Arkon F 125 based on the total weight of the mixture, with two top layers of polypropylene containing 0.75 weight-% polydimethylsiloxane is described. The number "125" in the tradename Arkon F 125 is an indication for its softening point of 125°C (appellant's letter of 15 October 1993). Comparative Example 3 corresponds to Example 1 except for the absence of the polydimethylsiloxane in the top layers. However, the top layers are made out of propylene homopolymers so that Example 3 does not take away the novelty of the claimed subject-matter. Apart from this comparative example, the specific film embodiments of D1 all contain a polydialkylsiloxane in the top layer(s) whilst the present film has a heat sealing top layer which is limited to a copolymer of propylene and ethylene not including any further ingredient ("consisting of").

4.2 D5 describes a polypropylene film comprising 100 parts by weight of polypropylene and 5 to 30 parts by weight of one or more petroleum resins or terpene resins which are substantially free from polar groups, said film having a glass transition temperature of 10 to 50°C and a specific degree of orientation depending on the refractive indexes in longitudinal, transverse and

vertical directions (sole claim). The film can be laminated with a polyolefin layer, especially a polypropylene layer having a thickness of 20% or less of the total thickness to improve printability, adhesive applications and oil resistance (page 6/11, third paragraph). The film has good steam barrier properties, orientation, molding properties and transparency (page 7/11, lines 3 to 6).

According to Example 1, a three layer film is produced by coextruding 100 parts by weight of polypropylene blended with 25 parts by weight of Escorez 5320 with a material comprising polypropylene randomly copolymerized with 2% of ethylene at 220°C. There has been no dispute between the parties that Escorez 5320 has a softening point of 125°C (ESSO Chemicals brochure "Escorez Resins" (1983) submitted with the appellant's letter of 15 October 1993). The laminate film is then cast on a casting drum at 85°C, immediately oriented in an oven at 135°C in lengthwise direction followed by orienting in the crosswise direction at 158°C. After a heat treatment at 161°C for 10 seconds, the film is subjected to a corona treatment.

This three-layer film is further coated with polyvinylidene chloride (PVDC) on one side thereof and with polyethylene on top of the PVDC layer. The composite film is then heat sealed to a packaging bag with the polyethylene layer on the inside. Thus, the only heat sealing layer used in D5 is a polyethylene layer. There is no mention in D5 that a random copolymer of propylene and 2% ethylene should be used as a heat sealing film layer.

4.3 It follows from the above that neither D1 nor D5

directly and unambiguously disclose all features of claim 1. Therefore, the claimed subject-matter is novel.

Closest prior art document

5. The patent in suit concerns the use of films in heat seal packaging. Such use is known from the prior art, in particular D3 and D5.

5.1 In respect of the choice of the closest prior art, the appellant started from D3 whilst the respondent and the opposition division referred to D5.

5.1.1 D3 describes a self-supporting multiple-layer film comprising a substrate layer of a polymer of a mono-alpha-olefin containing 2 to 8 carbon atoms in its molecule, a modulus improver of a natural or synthetic resin incorporated in the substrate layer, a polymeric heat sealable layer adhered to at least one surface of the substrate layer, and, on the surface of the heat-sealable layer remote from the substrate, an antistatic medium comprising a specific quaternary ammonium compound (claim 1 in conjunction with page 1, line 40). The modulus improver has a drop softening point of at least 70°C (page 1, lines 40 to 42). Suitable modulus improvers include inter alia "Escorez" petroleum hydrocarbon resins and "Zonarez" polyterpene resins (page 1, lines 51 and 52). These modulus improvers are employed in amounts sufficient to confer the required improvement in film modulus without detriment to other desirable characteristics of the polyolefin film, such as heat seal strength (page 2, lines 11 to 13). According to the table on page 6, the presence of such a resin in the base layer has a beneficial effect on

the heat seal strength.

In Example 10, a three layer film is produced by coextruding a core layer of propylene homopolymer containing 15% by weight of Zonarez 7115, with a random propylene-ethylene copolymer containing 6 weight% of ethylene, wherein one of the surfaces of the film is coated with an antistatic medium. There has been no dispute between the parties that Zonarez 7115 has a softening point of 115°C (appellant's letter of 15 October 1993). The resultant film exhibits good stiffness, seal strength and surface conductivity and is extremely clear.

D3 shows an improvement in the seal strength after incorporation of a modulus improver in the core layer (table page 6, Examples 8 and 9) when compared to a film without modulus improver (table page 6, Example 7). Furthermore, the films are used in the packaging industry where a high degree of electrical conductivity is required (page 1, lines 7 to 15).

5.1.2 According to the teaching of D5, the incorporation of petroleum or terpene resins in a polypropylene film (see point 4.2 above) provides good steam barrier properties, orientation, molding properties and transparency (page 7/11, lines 3 to 6); the presence of the polyolefin layer improves printability, adhesive applications and oil resistance (page 6/11 third full paragraph).

5.2 The patent in suit aims at the use of a film in heat seal packaging, the seal strength properties of which are improved over those previously obtained ie a higher seal strength is obtained at the same temperature or

the same seal strength can be obtained at a lower temperature while maintaining high modulus, excellent clarity and good barrier properties (column 1, lines 25 to 30 and 42 to 52).

5.3 According to established case law, the closest prior art for the purpose of assessing inventive step is that which corresponds to a purpose or technical effect similar to the invention requiring the minimum of structural and functional modifications (Case Law of the Boards of Appeal of the European Patent Office, 4th edition 2001, I.D.3.1).

5.4 Whilst D5 aims at providing good steam properties to the film and concerns a polyproplene film containing a heat sealable polyethylene layer not in direct contact with the core layer, the teaching of D3 relates to films having good antistatic properties, clarity and modulus and wherein the seal strength is improved by the incorporation of a resin into the base layer, which films comprise a heat sealable propylene-ethylene polymer layer in direct contact with a base layer. Since D3 is more closely related to the technical effect aimed at in the patent in suit and also requires less modifications with respect to the film structure than D5, D3 is the most appropriate starting point.

Problem and solution

6. Although the films in D3 provided good heat seal properties, further improvement was still desirable.

The problem to be solved over D3 may therefore be seen in providing the use in heat seal packaging of a film having improved seal properties, which allows the heat

sealing to be operated at lower temperatures and higher speed, while maintaining other good film properties such as haze and gloss, E-modulus and barrier properties, in line with the patent in suit, column 1, lines 25 to 28 and 42 to 52.

6.1 According to the patent in suit, this problem is solved by using a film which contains in the base layer a resin having a softening point of 120 to 180°C, as defined in claim 1.

6.2 In the example of the patent in suit, two biaxially oriented films are prepared by coextrusion. The first film is comparative and consists of a core of isotactic polypropylene which has been coated on both faces with a surface film of a random copolymer of 95.5% by weight of propylene and 4.5% by weight of ethylene. The second film differs from the comparative film in that the core is a blend of 80% by weight of the isotactic polypropylene and 20% by weight of a hydrogenated petroleum resin having a Ring and Ball softening point of 125°C. For both films the "cold" seal strength was measured by using a short dwell time of 0.5 seconds to form the seals (column 4, lines 41 to 43).

From Figure 1 it can be seen that the seal strength of the second film is much higher at temperatures between 100 and 120°C than that of the comparative film and hence illustrates a lower heat seal initiation temperature.

From Figure 2 it can be seen that the hot tack of the second film is much better at temperatures below 120°C than that of the comparative film, wherein the strength of the hot seal is measured just after the seal is made

and before the thermal energy employed to form the heat seal is dissipated.

6.2.1 These results are confirmed by the appellant's additional test reports filed with the letter of 15 October 1993. In this report, coextruded films have been made according to the example of the patent in suit with a coating layer of a random copolymer of propylene and 5% by weight of ethylene and a core layer of polypropylene and either 15% by weight of Escorez 5320 (softening point 125°C; sample B), 15% by weight of Arkon P115 (softening point 115°C; sample C) or 15% by weight of Zonarez 7115 (softening point 115°C; sample D). Whilst sample A contains a core layer of 100% polypropylene by way of comparison, and sample C (also comparative) is similar to the film produced in Example 10 of D3, sample B illustrates the claimed subject matter. The heat seal strengths at different temperatures between 95 and 140°C have been measured in a way similar to the procedure described in the patent in suit.

The results show that, at a seal temperature of 115°C or below, the heat seal strength of sample B is higher than that of comparative film samples C and D, whilst at higher seal temperatures the seal strength of the samples are similar (table and Figure, on page 2).

6.2.2 The appellant's further test report of 10 April 1995 shows the effect of the softening point of the resin in the core layer on the morphology of the film as well as its influence on the heat sealing behaviour, confirming the results of the appellant's first test report. In particular, according to Figure 7, the rate of heat transfer is improved, ie the seal temperature is

reached faster for the film used according to the patent in suit, so that the heat sealing may be carried out at a higher speed.

6.3 The test reports filed by the respondent do not contradict the above results.

6.3.1 In the respondent's first test report filed with the letter of 7 April 1993, two films are described, each consisting of three layers (page 4). One film (Example 1) comprises a core layer consisting of a propylene homopolymer and 10 % by weight of a hydrocarbon resin having a softening point of 115°C. In the other film (Example 2) the hydrocarbon resin has a softening point of 126°C. The films of Examples 3 and 4 comprise resins having softening points of 130 and 140°C, respectively (page 6). The heat seal strengths of the films are tested at temperatures of 130 and 140°C under different conditions of pressure and time. According to these examples the higher softening point does not improve the heat seal strength of the films (tables, pages 5 and 6).

These results do not contradict those of the appellant, since at heat seal temperatures as high as 130 and 140°C the seal strength of the films is influenced to a lesser extent by the softening point of the resin. Since no experiments at seal temperatures of 120°C or less are made, no conclusion can be drawn for that temperature range.

6.3.2 In the respondent's second test report of 31 October 1997, coextruded films have been produced according to Example 1 of the patent in suit, using a core layer containing polypropylene and 15 weight-% of different

hydrocarbon resins having softening points of 100°C (comparative), 128 and 140°C, respectively. The inner and outer layers were sealed at temperatures between 100 and 130°C and the seal strength was measured according to the T-peel strength method. In both seal tests the film containing a resin with a softening point of 140°C has a considerably higher seal strength than the two other films, in particular at a seal temperature of 110 to 130°C. Furthermore, in one of the seal tests the film containing a resin with a softening point of 128°C has a somewhat better seal strength within a seal temperature range of 110 to 120°C (see second Figure).

From the above results it follows that three of four seal tests show an improved heat seal strength also at low seal temperatures of 120°C or less when using resins having the required softening point. Although one of the four tests does not show such an improvement, the respondent's test results, as a whole cannot cast doubts on the other test results on file, which show a considerable improvement in heat seal strength, in particular at seal temperatures of 120°C or less. Consequently, the board is satisfied by the evidence on file that the softening point of the resin is crucial for obtaining the technical effect aimed at.

6.4 In view of the above reasons, the board comes to the conclusion that the above-defined problem is effectively solved.

Obviousness

7. It remains to be decided whether the claimed subject-matter is obvious having regard to the documents on

file.

7.1 D3 shows an improvement in the seal strength after incorporation of a modulus improver in the core layer (table page 6, Examples 8 and 9), compared to a film without modulus improver (table page 6, Example 7). However, D3 does not indicate any effect of the softening point, in particular not that a higher softening point would result in improved heat sealability. In addition, the seal conditions of D3 in which the seal strength is measured at a jaw temperature of 120°C and at a closure time of 2 seconds (page 5, line 36), are not suitable for recognizing any beneficial effect on the heat sealability at lower seal temperatures, in particular at lower closure times, such as 0.5 seconds.

D3 also mentions other modulus improvers having a drop softening point of at least 70°C including Zonarez polyterpene resins and Escorez petroleum resins (page 1, lines 40 to 58), but the skilled person does not find any incentive in D3 to use a resin having a softening point of 120 to 180°C in the base layer in order to arrive at the solution of the above-defined problem.

Consequently, the respondent's argument that the skilled person would replace the Zonarez 7115 resin used in the examples of D3 by other hydrocarbon resins mentioned in D3 in order to arrive at the claimed subject-matter cannot be followed.

7.2 None of the other cited documents takes into consideration the use of resins having high softening points in the core layers in order to improve heat

sealability. Hence, a combination of one or more of these documents with D3 does not render the claimed subject-matter obvious.

7.2.1 D5 focuses on the improvement of the steam barrier properties and only mentions heat sealing with respect to a five layer film having a heat sealing polyethylene layer (see point 4.2 above). As demonstrated in Figure 1 (curve 4) of the appellant's experimental report dated 5 November 2001, a three layer intermediate film made under the specific conditions of D5 shows a very poor heat seal strength at normal sealing temperatures between 90 to 140°C, which makes the film unsuitable for any heat seal packaging use as now claimed. Thus, there is no indication in D5 that the Escorez 5320 used in Example 1 might be a potential candidate for solving the present heat seal problem.

7.2.2 D1 aims at films having improved twist wrapping properties and stiffness and is not concerned with heat seal packaging. Resins having softening points of 60 to 180°C, which are incorporated into the base layers, are shown to have only an influence on the stiffness of the film (see table, page 5). Consequently, D1 provides no hint that the softening point of the resin may have any influence on the sealing properties of the film. Hence, there is no incentive in D1 to modify the film of D3 in the direction as claimed.

7.2.3 D7, which is cited in the patent in suit and was referred to by the respondent, mentions, with respect to retaining heat sealability, the incorporation of a resin in the surface heat seal layer of a three layer film, but not in the base layer, as in the patent in suit (D7, column 7, lines 13 to 19). Since D7 does not

provide any further indication to modify the film of D3 in the direction as claimed, a combination of D7 with D3 would not make the claimed subject-matter obvious.

The other documents cited during the proceedings are not more relevant than those analysed above. Therefore, the claimed subject-matter is inventive when taking D3 as the starting point.

7.3 Also starting from D5 as the closest prior art document one would reach no other conclusion. The problem to be solved over D5 may be seen in providing the use of a film in heat seal packaging having a simplified layer structure with improved heat sealing properties. The evidence on file shows that this problem is effectively solved. There is no hint either in D5 or in any other prior art document on file in which direction the layer structure of D5 should be modified in order to arrive at the use of a film in which a resin having a specific softening point is incorporated in a base layer which is in direct contact with a propylene-ethylene copolymer layer serving as heat sealing layer.

7.4 The respondent argued that part of the problem to be solved by the patent in suit concerned an improvement in barrier properties, which was the key problem in D5 so that an incentive for solving that partial problem in the prior art would render the claimed subject-matter obvious.

However, the object of the patent in suit is to improve the heat seal properties, not the barrier properties of the film. In this respect, the barrier properties must be seen in close connection to other film properties such as modulus, haze, gloss and clarity which should

be maintained at an acceptable level to meet the stringent criteria required for films in the packaging industry (column 1 lines 42 to 48). Consequently, these properties concern mere side aspects of the claimed use and an improvement in heat seal strength as defined in column 1, lines 25 to 30 is the core problem. Since the heat seal problem is not addressed in D5, there is no indication that the claimed subject-matter would be obvious when starting from D5.

7.5 From the above it follows that the subject-matter of claim 1 and the claims dependent thereon involves an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of the first instance with the order to maintain the patent on the basis of claims 1 to 15 submitted during the oral proceedings and a description yet to be adapted.

The Registrar: The Chairman:

C. Eickhoff R. Teschemacher