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**D E C I S I O N**  
of 7 May 1998

**Case Number:** T 0522/96 - 3.2.1

**Application Number:** 88310554.6

**Publication Number:** 0317166

**IPC:** B65D 65/40, B32B 27/08

**Language of the proceedings:** EN

**Title of invention:**  
Thermoplastic films for use in stretch/cling applications

**Patentee:**  
Exxon Chemical Patents Inc.

**Opponent:**  
01: Elf Atochem S.A. Département Propriété Industrielle  
02: Mobil Oil Corporation

**Headword:**  
-

**Relevant legal provisions:**  
EPC Art. 54, 56, 100(b), 123(2)

**Keyword:**  
"Inadmissible addition of subject-matter (no)"  
"Insufficiency of disclosure (no)"  
"Novelty (yes)"  
"Inventive step (yes)"

**Decisions cited:**  
T 0002/81, T 0201/83; T 0198/84, T 0332/87, T 0343/90,  
T 0526/92

**Catchword:**  
-



Case Number: T 0522/96 - 3.2.1

**D E C I S I O N**  
**of the Technical Board of Appeal 3.2.1**  
**of 7 May 1998**

**Appellant:** Elf Atochem S.A.  
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**Decision under appeal:** Interlocutory decision of the Opposition Division  
of the European Patent Office posted 9 May 1996  
concerning maintenance of the European patent  
No. 0 317 166 in amended form.

**Composition of the Board:**

**Chairman:** F. Gumbel  
**Members:** S. Crane  
J.-C. Saisset

## Summary of Facts and Submissions

- I. European patent No. 0 317 166 was granted on 30 March 1994 on the basis of European patent application No. 88 310 554.6.
- II. The granted patent was opposed by the present appellants and the other party to the proceedings as of right (opponents 02). They requested that the patent be revoked entirety on the grounds that its subject-matter lacked novelty and/or inventive step with respect to the state of the art (Article 100(a) EPC) and that the claimed invention was insufficiently disclosed (Article 100(b) EPC).

Of the state of the art relied upon in the opposition proceedings only the following documents have played any significant role on appeal:

D1: US-A-4 367 112

D3: The brochure "LOTADER, une gamme de liants pour la coextrusion", published by CDF Chimie in July 1985.

D5: US-A-4 486 552

D6: US-A-3 924 051

D7: EP-A-0 268 422

D8: EP-A-0 147 088 (document US-A-4 518 654 (D2) is an equivalent family member)

D9: G. L. Baker & R. F. Buesinger, Journal of Plastics Film & Sheeting, volume 3, April 1987, pages 112 to 117.

D10: GB-A-1 264 196

III. With its decision posted on 9 May 1996 the Opposition Division held that the patent could be maintained in amended form on the basis of a set of claims 1 to 13 submitted at the oral proceedings on 29 March 1996.

Claim 1 of this set of claims reads as follows:

"A thermoplastic stretch/cling film formed by coextrusion of a cling layer and a slip layer opposite to the cling layer, wherein said cling layer consists essentially of a copolymer of ethylene and from 20 to 35 wt.% of an acrylate based on the weight of copolymer and the film exhibits cling at 100% stretch of at least 50 grams."

Claims 2 to 11 relate to preferred embodiments of the film according to claim 1.

Claims 12 and 13 read as follows:

"12. A method for bundling, packaging or unitizing an article or plurality of articles by stretch-wrapping said article or articles with a stretch/cling film, wherein said film is a film according to any of the preceding claims."

"13. A package comprising a stretch-wrapped article or plurality of articles, wherein said film is a film according to any of the preceding claims 1 to 11."

- IV. A notice of appeal against this decision was filed by opponents 01 on 3 June 1996 and the fee for appeal paid at the same time.

The statement of grounds of appeal was filed on 11 September 1996.

The appellants requested that the decision under appeal be set aside and that patent revoked in its entirety.

- V. Oral proceedings before the Board were held on 7 May 1998.

Opponents 02, who had taken no active part in the appeal proceedings and who had informed the Board on 24 April 1998 that they would not be attending, were not present.

The respondents (proprietors of the patent) in addition to their main request that the appeal be dismissed submitted further amended claims according to first, second and third auxiliary requests. Claim 1 of the first and second auxiliary request included differently worded limitations with respect to the presence of tackifying agents. In the third auxiliary request the claims to the film had been replaced by claims to a method of using it.

- VI. The arguments put forward by the appellants in support of their request were essentially as follows:

There was no disclosure in the original application of a range of 20 to 35 wt.% acrylate in the copolymer of which the cling layer was formed. Thus, the change in the lower value of the range from 10 wt.% to 20 wt.% which had been allowed in the opposition proceedings offended against Article 123(2) EPC.

Furthermore, the introduction in the pre-grant examination proceedings of a minimum value of cling at 100% stretch of at least 50 gms, in order to avoid anticipation by document D1, had also added subject-matter. This value had been taken from a single example and the example where the amount of cling was lower than this value declared to be merely a comparative example. There was no suggestion in the original disclosure that a minimum cling value at 100% stretch of 50 gms was in any way an essential feature of the invention and its elevation to this status was therefore contrary to Article 123(2) EPC. This minimum cling value was certainly not originally associated with the particular range of acrylate content now claimed. A similar type of amendment had been held to be inadmissible in decision T 526/92 of 25 October 1994 (not published in OJ EPO).

The patent specification did not disclose the invention in such a way that it could be performed by the person skilled in the art, over the whole range claimed, without undue effort and experimentation. Although it was not disputed that in the specific examples given a cling of 50 gms at 100 % stretch had been achieved, those examples were restricted to cling layers made of copolymers containing 24 or 28 wt.% methyl acrylate and relied on the presence of particular amounts of anti-block and slip agents in the slip layer. Present claim 1 on the other hand covered a much broader range of copolymer composition and did not mention the additional anti-block and slip agents and the person skilled person in the art was not told in general terms how he should choose the specific compositions of the two layers in order to achieve the desired results. In the course of the proceedings the respondents themselves had provided contradictory information on this. At one stage they alleged by reference to their later published US-A-5 173 343 (D15) that a particular

molecular weight distribution in the copolymer was essential to give the required amount of cling; at another stage they said all the skilled person needed to do was choose a copolymer within the claimed composition range.

The subject-matter of present claim 1 lacked novelty with respect to each of the documents D1, D7, D8 and D9.

Document D1 disclosed a process during the course of which was formed, as an intermediate product, a coextruded film of polypropylene and a copolymer of ethylene and to 30 wt.% an acrylate. This intermediate product had all the structural and compositional features of present claim 1 and as a consequence must also exhibit the claimed minimum cling value.

The contents of documents D7 and D8 were very similar. Each disclosed a stretch/cling film comprising coextruded slip and cling layers wherein the cling layer was formed by a copolymer of ethylene and a minor amount of an acrylate. The term "minor amount" meant any value less than 50 wt.% so that these documents had made available to the public the use of an acrylate content falling with the broad range claimed.

On page 117 of document D9 it was stated that flexible packaging film could be produced by the coextrusion of ethylene methyl acrylate copolymer (EMAC) and for example low density polyethylene (LDPE). Document D9 mentioned two specific grades of EMAC having a methyl acrylate content lying within the range claimed (20 and 24 wt.%) and since LDPE was also proposed as the slip layer of the stretch/cling film according to several

examples of the patent specification it followed that the films referred to on page 117 of document D9 would also exhibit the amount of cling required by present claim 1.

If novelty were found to exist with respect to documents D1, D7, D8 and D9 then the most appropriate starting point for the evaluation of inventive step would be document D10. This disclosed in Example 2 a stretch/cling film comprising coextruded slip and cling layers with the cling layer being of a copolymer of ethylene and vinyl acetate (EVA). The vinyl acetate content of the copolymer was 28% and the copolymer contained no tackifying additives. In the passage extending between page 1, line 69 to page 2, line 6 copolymers of ethylene and an acrylate were portrayed as being suitable alternatives to EVA. Since appropriate grades of EMAC were commercially available and their excellent properties for packaging purposes generally known, as witnessed by document D9, it did not involve an inventive step to replace EVA by EMAC in the film of Example 2 of document D10 to arrive at the film presently claimed.

In the statement of grounds of appeal, but not at the oral proceedings, documents D3, D5 and D6 in combination with document D8 were also relied upon as demonstrating lack of inventive step. Document D3 disclosed that a copolymer of ethylene and an acrylate would exhibit cling; D5 proposed a stretch/cling film comprising coextruded layers of polyethylene and such an ethylene-acrylate copolymer; D6 described a coextruded film comprising a layer of an ethylene-acrylate copolymer and exhibiting inherent cling.



VII. In reply the respondents argued substantially as follows:

The presently claimed range of 20 to 35 wt.% acrylate content in the copolymer of the cling layer had been derived by combining the lower limit of the originally disclosed preferred range with the overall upper limit. This type of range building was clearly admissible, cf decision T 2/81 (OJ EPO 1982, 394).

Since the original application had been specifically and exclusively concerned with a stretch/cling film, of which an inherent property is that it exhibits substantial cling when stretched, it was permissible to introduce into the claim from the description a quantitative restriction on the amount of such cling in order to avoid potential conflict with the state of the art. The situation concerned in decision T 526/92 relied upon by the appellants was of a wholly different character. Amendments of the type made in the present case had been approved in several decisions of the Boards of Appeal, for example T 201/83 (OJ EPO 1984, 481) and T 343/90 (not published in OJ EPO).

The appellants had arbitrarily combined various parts of documents D1 in an attempt to derive as an intermediate product of the process actually disclosed there a film having the same structure and constituents as that defined in present claim 1. The truth of the matter was however that the only coextruded film mentioned in document D1 had an identical layer of EMAC on both sides and did not therefore comprise a slip layer and a cling layer as required by the claim.

The contention of the appellants that the person skilled in the art would understand the reference in documents D7 and D8 to a minor amount of acrylate comonomer as meaning anything up to 50 wt.% was

unrealistic. In its context it would be understood as referring to a small quantity, much less than the minimum of 20 wt.% required by claim 1. In any case, even if the proposition of the appellants were taken to be correct, it was plainly evident that documents D7 and D8 did not propose a cling layer comprised of a copolymer of ethylene and 20 to 35 wt.% of an acrylate.

Document D9 was concerned in general terms with the properties of EMAC. There was no suggestion that the two grades of EMAC specifically referred to could be useful as the cling layer of a stretch/cling film or that a coextruded LDPE/EMAC film referred to briefly on page 117 was such a stretch/cling film. Nor could it be assumed that any LDPE/EMAC film would automatically exhibit the properties inherently required of a stretch/cling film.

It followed that the subject-matter of claim 1 was novel with respect to each of documents D1, D7, D8 and D9. Given that document D8 was concerned with a stretch/cling film of the same basic type as the present invention this state of the art was the appropriate starting point for the evaluation of inventive step. The preferred material for the cling layer proposed in document D8 was linear low density polyethylene (LLDPE) containing polyisobutylene as a tackifying additive. The fundamental concept underlying the invention, as explained in the patent specification, was the provision of a stretch/cling film in which the use of such tackifying additives in the cling layer could be substantially avoided. Although document D8 made a reference amongst a list of other materials to the possibility of using a copolymer of ethylene and an acrylate in the stretch/cling film, it was not even clear that it should form the cling layer. Certainly, there was no indication that by selecting such a copolymer with a specific acrylate

content it would be possible to do without a tackifying additive. Furthermore, there was no suggestion in this direction in any of the other state of the art documents relied upon by the appellants.

### Reasons for the Decision

1. The appeal complies with the formal requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is therefore admissible.
2. *Article 123(2) and (3) EPC*
  - 2.1 In the original application, cf for example claim 3, the acrylate content of the copolymer which constituted the cling layer was stated to be between 2 and 40 wt.%, preferably between 10 to 35 wt.%, most preferably between 20 to 30 wt.%. In the course of the pre-grant examination proceedings a restriction of claim 1 to the preferred range of 10 to 35 wt.% was introduced. This was further restricted during the opposition proceedings to a range of 20 to 35 wt.%. It can be seen that this presently claimed range combines the most preferred range of 20 to 30 wt.% explicitly disclosed in the original application with the less preferred sub-range of 30 to 35 wt.% also implicitly disclosed there. There is nothing in such a combination which constitutes an addition of subject-matter, cf decision T 2/81' (supra). The amendment of the range claimed does therefore not offend against Article 123(2) EPC and since it represents a clear restriction on the breadth of granted claim 1 is also in conformity with Article 123(3) EPC.

2.2 It is clear from the introductory description of the original application that the invention portrayed there is especially concerned with stretch/cling wrapping films for use in bundling, packaging and palletising operations. It is explained that it is an important characteristic of such films that they exhibit cling properties when stretched so that after wrapping under tension around an object or collection of objects they do not unravel. An important aim of the invention was to achieve satisfactory cling without using tackifying additives. As taught and claimed in very general terms this was to be achieved by providing a cling layer which comprised a copolymer of ethylene and an acrylate.

In the pre-grant examination proceedings the respondents deemed it necessary to restrict the ambit of the claimed invention both in terms of the acrylate content of the copolymer, see above, and also by way of including a minimum value for the amount of cling exhibited at 100% stretch of the film. The original application contains no equivalent indication of a minimum value of cling, the value of 50 gms actually incorporated into claim being derived from Example 3. In the original application there are in fact 14 examples described having a cling at 100% stretch ranging from 20 gms (Example 1) up to 267 gms (Example 13). As a consequence of the introduction of a lower limit of 50 gms into claim 1, Example 1 was relegated to the status of a comparative example.

In support of their arguments that the introduction of the minimum value of cling of 50 gms at 100% stretch constituted an addition of subject-matter, the appellants relied in particular on the considerations of decision T 526/92. It was decided there that it was not permissible to create an open ended range with one limit value taken from an example. Crucial to that

decision was the finding that the generic part of the original application was silent as to the parameter in question, "TBN" (total base number), and consequently contained no information that TBN played any role in the framework of the application, see point 5.3 of the reasons.

Clearly, the situation considered in decision T 526/92 does not correspond in this respect to the present case since the ability of the film to exhibit cling when stretched is of paramount importance to a stretch/cling film and is explained as such in the original application. Thus, the Board is of the opinion that the present case is much more akin to the situation dealt with in decision T 343/90 (unpublished in OJ EPO), which is mentioned and distinguished in point 5.3.3 of the reasons of decision T 526/92. In decision T 343/90 it was held to be permissible to generate a range for a parameter from particular examples if it was clear from the original disclosure that the parameter involved was important in the context of the invention and if the individual limit values derived from the examples were not inseparably linked to the other parameters of those examples. As explained above the first condition is evidently met in the present case. As to the second condition, the Board is of the view that the person skilled in the art can recognise without any difficulty that the amount of cling can be varied at will by adjusting the amount of anti-block and slip additives present in the slip layer so that the value of 50 gms cling at 100% stretch given for Example 3 is not uniquely linked to the other parameters of that example, cf. decision T 201/83 (supra).

The fact that the present range is open-ended whereas that considered in decision T 343/90 is closed makes no significant difference to this appreciation since in that latter case what was of importance was that the

parameter involved lay within this range. In the present case what is important is that the stretch/cling film exhibit a particular minimum degree of cling to make it useful for certain envisaged applications and there is no suggestion that at some particular degree of cling the film would stop being useful for those applications. By introducing a numerical value for the minimum amount of cling to be exhibited the respondents have effectively clarified and defined what they now wish to be understood as being a "stretch/cling film" within the ambit of the claimed invention. In doing so they have removed one of the originally disclosed examples from the scope of what is claimed. This type of amendment is a quite common in pre-grant examination proceedings and the Board can see nothing untoward in it.

As a result of the above the Board has reached the conclusion that the introduction into granted claim 1 of the feature that the film exhibits cling at 100% stretch of at least 50 gms does not offend against Article 123(2) EPC. Furthermore, there is nothing in this appreciation which is altered by the subsequent amendment of the acrylate content range dealt with in point 2.1 above since the specific example from which the minimum value of 50 gms is taken has an acrylate content falling within the new range.

2.3 The other amendments made to the granted patent specification in the course of the opposition proceedings are merely those which are consequential to the amendment of claim 1.

2.4 In summary, the Board therefore sees no objections under Articles 123(2) and (3) EPC to the documents forming the basis of the decision of the Opposition Division to maintain the patent in amended form.

3. *Sufficiency of disclosure (Article 100(b) EPC*

Although the appellants have conceded that each of the disclosed examples of the claimed invention is workable as such and leads to a stretch/cling film as defined in present claim 1, they nevertheless dispute that the patent specification discloses the invention in a manner sufficiently clear and complete for it to be carried out by the a person skilled in the art over the whole range claimed.

In this context the appellants relied in particular on a statement by the respondents in the course of the opposition proceedings (letter of 28 February 1996) to the effect that all that was necessary to achieve the desired amount of cling was to choose a copolymer with an acrylate content within the 20 to 35 wt.% range claimed. They contrasted this with the fact that in original Example 1 (now comparative Example 1) the copolymer contained 24 wt.% acrylate but only exhibited 20 gms of cling at 100% stretch.

When viewing the disclosed examples of the invention as a whole it is however apparent that the measured cling value is highly dependent on the amount of anti-block and slip additives present in the slip layer. (Cling as defined in the patent specification is measured between contacting cling and slip layers of the film). Original Example 1 has a high combined content of anti-block and slip additives and it can be seen by comparison with original Examples 2 to 5, which all relate to the same copolymer with 24 wt.% acrylate content and the same basis LLDPE slip layer with lower combined contents of these additives, that it is this high combined content and nothing else which leads to the low cling value.

On the other hand, the Board cannot accept the auxiliary argument of the appellants that if the presence of anti-block and slip additives is important for the performance of the invention, then this should be defined in claim 1. The point is that these additives when included (they are not present in all embodiments) are there to give the slip layer its desired properties, not to bring the cling value above the minimum defined in the claim.

The appellants also relied on the fact that the respondents in the earlier proceedings had emphasised, with reference to their subsequently published US patent No. 5 173 343, the importance of a narrow molecular weight distribution in obtaining good cling properties but that the present patent specification made no mention of this. At the oral proceedings before the Board the respondents explained that this US patent merely represented a further improvement over the subject-matter of the present patent and that it could be seen from Example 15 of the US patent that even without this preferred molecular weight distribution the degree of cling required by present claim 1 was amply present. That is indeed the case. The respondents also argued that it was not a requirement for sufficiency of disclosure that any ethylene-acrylate copolymer with an acrylate content of 20 to 35 wt.% would give the claimed minimum value of cling. The value of cling obtained depended on the material of the slip layer, the amount of additives contained therein and other factors such as the melt index of the copolymer. These considerations were either clear from the patent specification or were well-known to the person skilled in the art. In the absence of any concrete evidence to the contrary adduced by the appellants, the Board finds these arguments of the respondents convincing and is of the opinion that the person skilled in the art, on the basis of the



teachings of the patent specification and his common general knowledge and without any undue burden of experimentation, would be able to perform the invention over the whole range claimed.

The ground of opposition under Article 100(b) EPC does not therefore hold good.

4. *Novelty*

4.1 Document D1 relates to the manufacture of heat-sealable biaxially oriented polypropylene film. According to claim 1 of document D1 a continuous method is proposed in which an extruded film of polypropylene is first uniaxially stretched in the machine direction, melt or extrusion coated with a thin layer of a copolymer of ethylene and 6 to 30 wt.% of methyl acrylate and then stretched transverse to the machine direction. It is not in dispute that such a biaxially oriented film does not constitute a stretch/cling film within the terms of the presently claimed invention.

However, document D1 also discloses at column 3, lines 4 to 13, a method in which a coextrudate of core and skin resins is first formed which is then subsequently biaxially stretched. In this passage it is stated that "several of the following examples" were formed by this method, but in fact only one of them, Example 2, is formed in this way. In this example the coextrudate comprises a core of polypropylene and two surface layers of a copolymer of ethylene and 20 wt.% of methylacrylate.

The appellants have argued that the coextrudate of Example 2, before stretching, constitutes an "intermediate product" which corresponds in structure and composition to the subject-matter of present

claim 1, will therefore inherently exhibit cling corresponding to that claimed, and consequently fully anticipates the claim. The Board cannot accept that argument for the following reason. Although the present patent does not exclude the possibility of the claimed stretch/cling film having more than two layers, cf granted claim 10, it is imperative that the slip and cling layers defined in claim 1 are the outermost layers of the film and that any additional layers lie between them. The intermediate product of Example 2, however, has an EMAC layer on both sides so that even if such a layer were taken to constitute a cling layer (as disclosed it is present to enhance heat-sealability) the intermediate product would certainly not comprise a slip layer.

Furthermore, although it is true that in other examples of D1 only one side of the polypropylene core is coated with an EMAC layer, these laminates are not formed by coextrusion as required by present claim 1. For the purpose of evaluating novelty it would not be appropriate to combine the general passage of document D1 concerning coextrusion with the details of specific examples in which there was no coextrusion, cf decision T 332/87 (not published in OJ EPO).

4.2 Document D7 belongs to the state of the art according to Article 54(3) EPC. It relates to a stretch/cling film formed by coextrusion of a slip layer and a cling layer. In column 2, lines 24 to 33, it is stated that preferred polymers suitable for forming the layers are

"polyolefins such as polyethylene, polypropylene, copolymers of ethylene or propylene and each other or with a minor amount of at least one other mono-

olefinically unsaturated monomer such as butene-1, isobutylene, an alkenoic acid such as acrylic acid, an ester of an alkenoic acid such as an acrylate ester, vinyl acetate and styrene".

Particularly preferred for both layers is LLDPE. The cling layer contains polyisobutylene as a tackifying additive and the slip layer contains 15 wt.% of nylon 6,6.

The appellants have argued that the term "minor amount" in the above quoted passage would be understood by the person skilled in the art as any amount up to 50 wt.%. The Board, in agreement with the respondents, finds that this interpretation is unlikely in the context (for example the "minor amount" of C<sub>4</sub>-C<sub>10</sub> α-olefin monomer in LLDPE is 1 to 15 wt.%, see column 2, lines 36 to 43 of document D7) but cannot in any case accept that it would lead to document D7 having to be considered as making a cling layer of ethylene-acrylate copolymer with an acrylate content of between 20 to 35 wt.% as claimed available to the skilled person as a technical teaching, cf. for example decision T 198/84 (OJ EPO 1985, 209).

4.3 The disclosure of document D8 is similar to that of document D7. It too relates to a coextruded stretch/cling film having a slip layer and a cling layer. In the last paragraph of page 3 it is stated that :

"particularly preferred thermoplastic films suitable for use in the present invention are the polyolefins such as polyethylene, polypropylene, copolymers of ethylene and propylene, and polymers obtained from

ethylene or propylene copolymerised with relatively minor amounts of other mono olefinic monomers such as butene-1, isobutylene, acrylic acids, esters of acrylic acids, vinyl acetate, styrene and the like or combinations thereof."

Preferred for the cling layer is LLDPE with polysiobutylene as a tackifying additive; preferred for the slip layer is LDPE with an anti-block additive.

The appellants have interpreted the reference to a "relatively minor amount" of acrylate in the same way as explained above with reference to the term "minor amount" and the same considerations of the Board apply.

- 4.4 Document D9 is a general paper concerning the manufacture, properties and uses of EMAC. On page 112 it is stated that commercially available EMAC resins contain 18 to 24 wt.% of methyl acrylate, but levels as high as 40% have been made. On pages 113 and 114 various properties of EMAC with 20 wt.% methyl acrylate are compared favourably with those of typical LDPE. On page 115 some properties of EMAC with respectively 20 and 24 wt.% methyl acrylate are compared. On pages 116 and 117 the good processability of EMAC is portrayed in particular by reference to the fact that it can be coextruded with many other types of polymer, for example to produce flexible packaging films. In this context mention is made in the second paragraph of page 117 to blown coextrusion with LDPE.

In the view of the appellants document D9 thus discloses a coextruded LDPE/EMAC packaging film which by virtue of the known properties of LDPE and EMAC (cf Table I on page 113) will be stretchable and of which the EMAC layer due to its inherent qualities will exhibit the required degree of cling with respect to LDPE acting as a slip layer. In other words, that the

packaging film is a stretch/cling film within the terms of present claim 1. However, even if it were assumed that the EMAC being referred to in the second paragraph of page 117 has an acrylate content of 20 or 24 wt.% as in the particular examples disclosed in document D9, it cannot be automatically assumed that a corresponding coextruded LDPE/EMAC film in which the specific compositions of the layers with respect to additives etc are completely unidentified will exhibit the minimum level of 50 grams of cling at 100% stretch required by claim 1.

In this context a clear distinction has to be drawn between the concession of the respondents that any stretch/cling film taught as being for the same field of use as envisaged in the present invention, such as that disclosed in document D8, could indeed be assumed to exhibit the claimed amount of cling and the unfounded contention of the appellants that any film with two coextruded layers based on materials corresponding to those used in the present patent, such as that disclosed in document D9, must also exhibit the claimed amount of cling despite the fact that there is no suggestion that the film involved is in any way intended to be used in stretch/cling applications.

4.5. For the above reasons the Board has come to the conclusion that the subject-matter of present claim 1 is novel with respect to the cited state of the art.

5. *Inventive step*

The Board shares the opinion of the respondents that document D8, the US equivalent of which is already mentioned in the introductory description of the present patent, represents the correct starting point for the evaluation of inventive step. This document is

specifically concerned with a stretch/cling film, particularly for palletizing loads, and discusses in similar terms to the present patent the difficulties associated with the fact that the films on adjacent palletized loads can cling to each other. The proposal to solve this problem is the two layer film discussed in point 4.3 above.

The particular examples of film disclosed in document D8 require the presence of a tackifying additive to give the required amount of cling. The presence of such an additive leads however to a number of problems, as set out in page 2, lines 27 to 32, of the present patent specification. Mentioned there is the tendency of the additives to accumulate on the packaging machinery, to migrate into the wrapped product or to migrate through the slip layer, causing tackiness on both sides of the film. The fundamental aim of the invention is therefore to provide a stretch/cling film which has good cling properties, even without the use of tackifying additive. In this context it is important to note that this expression of the aim of the invention is not inconsistent with the fact that present claim 1 does not require that no tackifying additive be present since in some circumstances it may be desired to enhance the good cling properties further by the incorporation of a smaller amount of tackifying additive than was used previously.

There is nothing in document D8 itself which suggests to the person skilled in the art that it might be possible, by using one particular form of the other copolymers listed in general terms instead of the preferred LLDPE, to dispense with the tackifying additive. Indeed this list of copolymers does not even suggest that they might be more suitable for the cling layer than the slip layer.

According to the appellants, however, the person skilled in the art, on the basis of his knowledge about the properties of copolymers of ethylene and an acrylate, would recognise that such a material would indeed be very suitable for forming the cling layer of the film disclosed in document D8, in particular because of the fact that these materials exhibited inherent cling. In this respect the appellants have relied on documents D3, D5, D6 and, in particular at the oral proceedings, D10.

Document D3 is an information brochure concerning the product "Lotader". It is indicated that some grades of the product consist of a copolymer of ethylene and butly acrylate, the content of the latter in the copolymer not being mentioned. It is said that the "Lotader" products have been developed to promote adhesion between layer of resins which would not otherwise adhere to each other. In addition to use as an adhesive layer in coextruded products they can also be used as a heat-sealing layer in packaging films. A two layer LDPE Lotader film is mentioned for use as a coating film.

Document D5 concerns a cling wrap film for food which has good anti-fogging properties. In all of the particular embodiments disclosed the film is of LLDPE having incorporated therein a minor portion of an anti-fog agent. In column 4 at lines 45 to 49 it is stated that the anti-fog agent may be added with other additives e.g. tackifiers, slip agents or block agents which may be desired in certain instances. In column 3 at lines 7 to 11 it is indicated that it is also within the purview of the invention to employ ethylene polymers which contain other comonomers such as acrylic acid, methacrylic acid, alkyl acrylates, vinyl esters and carbon monoxide.

Document D6 relates to a biaxially orientated laminated film comprising a layer of a copolymer of vinylidene chloride and vinylchloride (commonly known as saran) and at least one coextruded layer of a copolymer of ethylene and an unsaturated ester, for example EVA or ethylene-ethyl acrylate (EEA) amongst others. The biaxial orientation of the coextruded film is performed in accordance with particular conditions to give an end product very suitable for various packaging applications. In column 6, at lines 18 to 21, it is stated that the tackiness of the unsaturated ester copolymer makes it an excellent adhesive layer for other films, paper or metal. In Example II there is described a three-layer film comprising surface layers of saran and EEA respectively and an intermediate layer of EVA. The saran layer gives excellent barrier properties and the EEA provides anti-blocking, good low temperature and good heat sealability properties in the finished film.

The Board can find nothing in documents D3, D5 and D6 which would encourage the person skilled in the art to expect that a copolymer of ethylene and 20 to 35 wt.% of an acrylate would have the mechanical and physical properties inherently required for the cling film of the basic type disclosed in document D8 and that the use of this material could thus obviate the addition of tackifying additives in order to provide the necessary degree of cling. All that can be seen from document D3 is that a certain type of ethylene-acrylate copolymer, disclosed only in very general terms, is useful as an interlayer adhesive in coextruded products. The same can be deduced in general terms from document D6, although the emphasis there is more on the properties of EVA in this capacity, and where EEA is used as the outer layer of laminated film in Example II it is indicated to have anti-blocking rather than cling properties (where "cling" is mentioned in column 1,



lines 23 and 24, of document D6 the reference is clearly to the properties of saran and not the ethylene-unsaturated ester type copolymer). The role of an interlayer adhesive in coextruded products is however clearly distinct from that of a cling layer in a stretch/cling film. As for document D5, all that can be learnt from this with respect to ethylene-acrylate copolymers in general is that these might be a suitable replacement for LLDPE in a packaging film. This does not appear to go beyond what is already said in document D8.

The last piece of prior art to be considered is document D10, in which particular reliance was placed by the appellants at the oral proceedings. The main concern of this document is the production of a packaging film, particularly for foodstuffs, which combines high extensibility with good surface slip. To this end the film comprises an elastomeric core layer with an extensibility of greater than 400% and surface layers with an extensibility of at least 50% of that of the core layer. The polymeric resin of the surface layers is preferably heat sealable and may be for example EVA, an ethylene-acrylate copolymer or a copolymer of ethylene and propylene. Especially preferred are ethylene copolymers wherein the comonomer comprises from 25 to 35 wt.% of the polymeric composition. In Example 1 the core layer is of a styrene/butadiene rubber and the surface layers are of EVA with 28 wt.% vinyl acetate containing various additives to obtain non-blocking and good slip properties with a coefficient of friction with respect to metal of 0.40. In Example 2 the film of Example 1 is modified in that one surface layer is not provided with the anti-block and slip additives. This one layer will therefore cling to the product being wrapped.

Since the film of Example 2 of document D10 can undoubtedly stretch and also exhibits cling, the appellants are correct in their contention that it must therefore be considered as a "stretch/cling" film in the general sense even if there is no indication that it might be suitable for the load palletizing types of application envisaged in the present patent. The cling mentioned in document D10 is however between the film and the wrapped product and not between the surface layers of the film as required by the present invention, so that it cannot be automatically assumed, and nor has any evidence been adduced on this point, that the minimum amount of cling required by present claim 1 would be present in the known film. Be that as it may, the Board is of the opinion that the person skilled in the art, even if he was to take account of document D10 when seeking to develop the stretch/cling film proposed by document D8, would at most be led to consider the use of EVA for the cling layer of the film, since this is the one material specifically mentioned in document D10 as exhibiting cling.

The approach preferred by the appellants was to take document D10 as the starting point for the evaluation of inventive step. The Board sees difficulties here since document D10 is not primarily concerned with a stretch/cling film at all and in the one embodiment which could be considered in general terms as consisting such a film, it is not clear whether the amount of cling required by present claim 1 is present, this having been conceded by the respondents with respect to document D8. In any case, since in that one embodiment the cling layer is comprised of EVA and since, as can be seen from the above evaluation of the remaining state of the art documents, there is nothing

which could encourage the person skilled in the art to replace the EVA by an ethylene-acrylate copolymer to achieve an equivalent or superior cling effect, the Board is of the opinion that this was not an obvious step for him to take.

The Board has therefore come to conclusion that the subject-matter of present claim 1 involves an inventive step (Article 56 EPC).

5. The method of present claim 12 and the package of present claim 13 necessarily entail the use of the film according to claim 1 and derive their patentability therefrom.

### Order

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

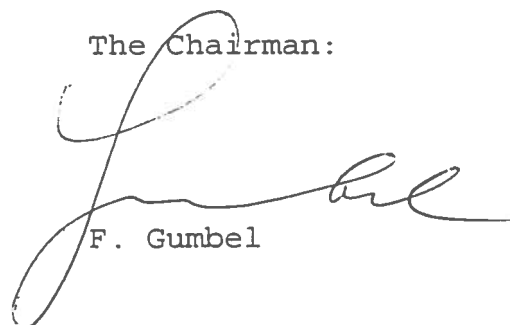
The appeal dismissed.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel

*Handwritten signature* 703.D

