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D E C I S I O N
of 22 November 2005

Case Number: W 0012/05 - 3.3.03

Application Number: PCT/EP2004/005353

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Title of invention:
Polyethylene films for packaging

Applicant:
Basell Poliolefine Italia S.p.A.

Opponent:
-

Headword:
-

Relevant legal provisions:
PCT Art. 17(3)(a)
PCT R. 13.1, 13.2

Keyword:
"Unity of invention - no"

Decisions cited:
-

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Case Number: W 0012/05 - 3.3.03

International Application No. PCT/EP2004/005353

D E C I S I O N
of the Technical Board of Appeal 3.3.03
of 22 November 2005

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Decision under appeal: **Protest according to Rule 40.2(c) of the Patent Cooperation Treaty made by the applicants against the invitation (payment of additional fees) of the European Patent Office (International Searching Authority) dated 5 October 2004.**

Composition of the Board:

Chairman: R. Young
Members: C. Idez
B. Günzel

Summary of Facts and Submissions

I. International application PCT/EP04/005353 entitled "Polyethylene films for packaging" comprising 6 claims, was filed on 18 May 2004.

II. Claim 1 of the application as filed read as follows:

"An elastic film comprising a polymer blend (A) comprising (percent by weight):
(I) 50 to 80% of an ethylene polymer composition comprising a recurring unit derived from an ester selected from (1) ethylenically unsaturated organic monomer of esters of unsaturated C_3-C_{20} monocarboxylic acids and C_1 to C_{24} monovalent aliphatic or alicyclic alcohols, and (2) vinyl esters of saturated C_2-C_{18} carboxylic acids, wherein the ester content ranging from 2.5 to 8 wt% based on the total weight of the final ethylene polymer composition; the ethylene polymer composition having a density ranging from 0.920 to 0.935 g/mL; and
(II) 20 to 50% of an ethylene-based polymer component having a density ranging from 0.9 to 0.930 g/mL and a melt flow rate up to 4 g/10 mm; the said component being selected from:
(i) a linear polyethylene (i) consisting of ethylene and 0.5 to 20% by mole of a CH_2=CHR α-olefin, where R is a hydrocarbon radical having 2-8 carbon atoms; and
(ii) a polymer blend (ii) comprising (a) 80-100 parts by weight of a random interpolymer of ethylene with at least one CH_2=CHR α-olefins [sic], where R is a hydrocarbon radical having 1-10 carbon atoms, the said polymer containing up to 20 mol% of CH_2=CHR α-olefin and having a density between 0.88 and 0.945 g/mL; and (b)

from 5 to 30 parts by weight of a random interpolymer of propylene with at least one CH_2=CHR α-olefin, where R is a hydrocarbon radical having from 2 to 10 carbon atoms, and optionally with ethylene, said interpolymer (b) containing from 60 to 98% by weight of units derived from propylene, from 2 to 40% by weight of recurring units derived from the CH_2=CHR α-olefin, and from 0 to 10% by weight of recurring units derived from ethylene, and having a xylene-insoluble fraction a [sic] room temperature greater than 70%.
said film having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 or less."

Claims 2 to 6 are dependent on Claim 1.

III. On 5 October 2004 the European Patent Office (EPO), acting as International Searching Authority (ISA), in compliance with Article 17(3)a) PCT issued an "Invitation to pay Additional Fees" (hereinafter "Invitation") stating that the application contravened the requirements of unity of invention according to Rule 13 PCT and inviting the Applicant to pay, within a time limit of 30 days, 1 additional search fee.

IV. This "Invitation" resulted from the EPO/ISA's conclusion that the common concept linking the two alternatives of Claim 1 was an elastic film having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 or less containing an ethylene polymer composition (I) and an ethylene based polymer (II) comprising up to 20 mol% of α-olefin, and having a density 0.9 to 0.930 and a MFR of up to 4 g/10 min for use in packaging, namely pallet

packaging, was known from document EP-A-0 065 359 (hereinafter referred to as D1). According to the "Invitation" the special technical features stipulated by Rule 13(2) PCT that defined a contribution to the prior art were the use of linear polyethylene (first alternative) and the use of propylene interpolymers comprising 2-40% α-olefin and 0-10 wt% ethylene and having a xylene-insoluble fraction at room temperature of greater than 70% (second alternative). According to the "Invitation" a linear polyethylene was a very different polymer than a crystalline polypropylene, and the description of the application did not demonstrate that the polypropylene solved the same problem as the linear structure of the polyethylene. Consequently, there was no single general inventive concept linking the following groups of claims:

Group I: The subject-matter of Claims 1 (first alternative), 2, 3 and 6, and

Group II: The subject-matter of Claims 1 (second alternative), 2, 4, 5 and 6.

V. On 3 November 2004 the Applicant paid under protest the additional search fee.

VI. In its letter dated 3 November 2004 announcing the afore-mentioned payment the Applicant argued essentially as follows:

(i) While it could be accepted that a crystalline polypropylene and a linear polyethylene did not give the same performances, crystalline polypropylene was

not the alternative component to the linear polyethylene.

(ii) According to the second alternative, the linear polyethylene could be replaced by a blend of an interpolymer of ethylene with an interpolymer of propylene.

(iii) The interpolymer of ethylene was a linear polyethylene as the component corresponding to the first alternative.

(iv) This interpolymer was the main component of the blend.

(v) The blend had the same performances as or even better than the linear polyethylene alone. The present application showed that it could be used in place of the linear polyethylene.

(vi) Consequently the two alternatives were very similar and provided similar performances.

(vii) Thus, the requirement of unity of invention was met.

VII. On 10 [sic] February 2005 the Review Panel of EPO/ISA issued a "Notification regarding Review of Justification for Invitation to pay Additional Search Fees" (hereinafter "Review Notification"), in which the Applicant was invited to pay a protest fee within a time limit of one month.

The position of the Review Board can be summarized as follows:

(i) Two inventions had been identified in the present application:

First invention: a film used for packaging having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 or less and comprising an ethylene polymer composition (I) and an ethylene linear polymer (II) having a density ranging from 0.9 to 0.930 g/mL and a melt flow rate up to 4 g/10 mm;

Second invention: a film used for packaging having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 or less and comprising an ethylene polymer composition (I) and ethylene polymer blend (II) having a density ranging from 0.9 to 0.930 g/mL and a melt flow rate up to 4 g/10 mm; and comprising a polyethylene containing up to 20 mol% of alpha olefin and a propylene copolymer having a xylene-insoluble fraction a room temperature greater than 70%.

(ii) Since D1 disclosed film used for packaging having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 or less and comprising an ethylene vinyl acetate copolymer (EVA) as claimed in the present application and a very low density polyethylene (VLDPE) of density and melt flow rate as claimed in the present application, the special technical features stipulated by Rule 13(2) PCT were:

for the first invention the fact that the polyethylene was linear, and

for the second invention a propylene copolymer having a xylene-insoluble fraction of greater than 70%.

(ii) The technical effect achieved by the linear polyethylene was the improvement of the tear strength, but there was no technical effect demonstrated for the presence of a polypropylene.

(iii) Thus, the technical effects related to the special technical features were not the same. Nor were the same the problems solved by these technical features.

(iv) Since the special technical features were not corresponding, there was hence no unity of invention.

(v) The arguments of the Applicant that the one technical feature was linear polyethylene and the other was a blend of polyethylene with polypropylene could not be accepted since polyethylene was part of the two special technical features.

(vi) Consequently, the invitation to pay an additional fee was justified.

VIII. On 9 [sic] February 2005 the Applicant paid the protest fee requested in the "Review Notification".

IX. The Applicant requested the reimbursement of the additional search fee and of the protest fee which had been paid.

Reasons for the Decision

1. The protest is admissible.

2. As can be deduced from the description, the aim of the present application is the provision of an elastic film exhibiting excellent sealing properties and dynamic properties such as good elastic properties, flexibility, high residual strength and a desired balance between tensile strength and residual strength. This problem is solved, according to the application, by providing a film having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 or less made from a polymer blend comprising:

(I) 50 to 80% of an ethylene polymer composition comprising a recurring unit derived from an ester selected from (1) ethylenically unsaturated organic monomer of esters of unsaturated C_3-C_{20} monocarboxylic acids and C_1 to C_{24} monovalent aliphatic or alicyclic alcohols, and (2) vinyl esters of saturated C_2-C_{18} carboxylic acids, wherein the ester content ranging from 2.5 to 8 wt% based on the total weight of the final ethylene polymer composition; the ethylene polymer composition having a density ranging from 0.920 to 0.935 g/mL; and

(II) 20 to 50% of an ethylene-based polymer component having a density ranging from 0.9 to 0.930 g/mL and a melt flow rate up to 4 g/10 mm; the said component being selected from:
a linear polyethylene (i) consisting of ethylene and 0.5 to 20% by mole of a CH_2=CHR α-olefin, where R is a hydrocarbon radical having 2-8 carbon atoms; and

a polymer blend (ii) comprising (a) 80-100 parts by weight of a random interpolymer of ethylene with at least one CH_2=CHR α-olefin, where R is a hydrocarbon radical having 1-10 carbon atoms, the said polymer containing up to 20 mol% of CH_2=CHR α-olefin and having a density between 0.88 and 0.945 g/mL; and (b) from 5 to 30 parts by weight of a random interpolymer of propylene with at least one CH_2=CHR α-olefin, where R is a hydrocarbon radical having from 2 to 10 carbon atoms, and optionally with ethylene, said interpolymer (b) containing from 60 to 98% by weight of units derived from propylene, from 2 to 40% by weight of recurring units derived from the CH_2=CHR α-olefin, and from 0 to 10% by weight of recurring units derived from ethylene, and having a xylene-insoluble fraction a room temperature greater than 70%.

3. It is therefore clear from the definition of the claimed films that it encompasses two groups of films i.e.:
films having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 made from a blend comprising the ethylene polymer composition (I) and a linear polyethylene (II)(i)) (referred to below as alternative 1), and

films having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 and made from a blend comprising the ethylene polymer composition (I) and the polymer blend (II)(ii) (referred to below as alternative 2).

4. In the Board's view these two groups of films are conceptually linked by the generic definition of the component (II) of the blend, i.e. a an ethylene-based polymer component having a density ranging from 0.9 to 0.930 g/mL and a melt flow rate up to 4 g/1O mm. Thus, this generic definition of the component (II) would qualify as common unifying "special technical feature" within the meaning of Rule 13.2. PCT, provided this common concept is not known.

5. In that respect, the Board cannot accept the submissions of the Applicant that a further common unifying feature could be found between the components (II)(i) and (II)(ii) since, as argued by the Applicant, the component (II)(ii) contains as main component an interpolymer of ethylene (a) just as component (II)(i) and since the components (II)(i) and (II)(ii) provide similar performances.

5.1 This is primarily because the interpolymer (a) of the component (II)(ii) would, in view of the generic definition of the component (II) and of the term "comprising" used in the definition of the polymer blend (A), inevitably differ in terms of density, type of comonomers and melt flow rate from a polyethylene component of type (II)(i), otherwise this would imply that the presence of an interpolymer of propylene in component (II)(ii) is either superfluous or contributes to solve a different problem than the ethylene polymer (II)(i)). Thus, the only common unifying feature between the component (a) of component (II)(ii) and the linear polyethylene component (II)(i) would be the presence of ethylene as monomer which is already required in the general definition of component (II).

5.2 In any case, even if one would consider that the interpolymer (a) would correspond to the linear polyethylene (II)(i), there will be no further common unifying feature between the blend (II)(ii) and the linear polyethylene (II)(i) than those required in the generic definition of component (II), since, as acknowledged by the Applicant (cf. point VI (i) above) the crystalline polypropylene cannot represent an equivalent to polyethylene (II)(i).

5.3 The further argument of the Applicant that components (II)(i) and II(ii) would provide similar performances is also not convincing. This is firstly because there is no evidence in the present application that this is indeed the case, since the only example of the application illustrates only a composition comprising a component (II)(i). Secondly, even if it were the case, this would merely underline that they are the requirements set out in the **generic** definition of component (II) which ensure that the components (II)(i) and (II)(ii) provide similar performances.

6. In the "Review Notification" (Section VI above) it has been submitted that document D1 discloses packaging films having a ratio between the MD Elmendorf tear resistance and TD Elmendorf tear resistance of 0.3 or less and made from a blend comprising an EVA copolymer corresponding to component (I) as claimed in the application in suit and a VLDPE of density and MI as claimed in the application in suit for component (II).

7. In that respect the Board notes that document D1 relates to an extrudable composition forming, via a tubular blown or slot cast film extrusion process, an improved stretch wrap film having good puncture and Elmendorf tear resistance and which is self-sealable at low-temperatures.

8. The Board further notes that in its Example 13 D1 discloses a composition comprising 50% by weight ethylene vinyl acetate copolymer containing 6.0% by weight of vinyl acetate having a density of 0.929 g/cm^3 and a melt index of 2, and 50% of an ethylene-butene copolymer having a density of 0.918 g/cm^3 and a melt index of 2, and in its Example 14 a composition comprising 50% by weight ethylene vinyl acetate copolymer containing 4.5 % by weight of vinyl acetate having a density of 0.932 g/cm^3 and a melt index of 0.9, and 50% of an ethylene-butene copolymer having a density of 0.918 g/cm^3 and a melt index of 2 (D1, Table I; page 15, lines 14-16, lines 26-29; page 15, line 30 to page 16, line 3). According to D1, the compositions of Examples 13 and 14 are used for making films which have a ratio of the MD Elmendorf tear resistance to the TD Elmendorf tear resistance of less than 0.3 (Table II; Runs 13 and 14).

9. Since the ethylene vinyl acetate copolymers used in the compositions of Examples 13 and 14 of D1 fall under the definition of component (I) of the blend according the present application, since the ethylene-butene copolymer used in the compositions of Examples 13 and 14 of D1 fall under the generic definition of component (II) according to the present application, and since the films of Examples 13 and 14 exhibit a ratio between

MD Elmendorf tear resistance and TD Elmendorf tear resistance of less than 0.3, the Board can only come to the conclusion that the common unifying concept defined in paragraph 3 above is already known from D1.

10. Consequently, the subject-matter of Claims 1 (alternative 1), 2 (alternative 1), 3, and 6 (alternative 1) and that of Claims 1 (alternative 2), 2 (alternative 2), 4, 5 and 6 (alternative 2) must be considered as not so linked as to form a single general inventive concept within the meaning of Rule 13.1 PCT.

Order

For these reasons it is decided that:

The protest is dismissed.

The Registrar: The Chairman:

C. Eickhoff R. Young