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Datasheet for the decision of 28 March 2007

Case Number: T 0586/03 - 3.3.03

Application Number: 98302388.8

Publication Number: 0867473

IPC: C08L 23/04

Language of the proceedings: EN

Title of invention:
High strength polyethylene film

Applicant:
UNION CARBIDE CHEMICALS & PLASTICS TECHNOLOGY CORPORATION

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 83, 84, 123(2)

Keyword:
"Inventive step (yes)"
"Sufficiency of disclosure (yes)"

Decisions cited:
T 0002/80

Catchword:
-

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Case Number: T 0586/03 - 3.3.03

D E C I S I O N
of the Technical Board of Appeal 3.3.03
of 28 March 2007

Appellant: UNION CARBIDE CHEMICALS & PLASTICS TECHNOLOGY CORPORATION
Applicant: 39 Old Ridgebury Road
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Decision under appeal: **Decision of the Examining Division of the European Patent Office dated 6 November 2002 and posted 21 November 2002 refusing European application No. 98302388.8 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: R. Young
Members: C. Idez
E. Dufrasne

Summary of Facts and Submissions

I. European patent application No. 98 302 388.8 filed on 27 March 1998, published under No. EP-A-0 867 473 on 30 September 1998 and claiming the priority of the US patent application No. 828408 filed on 28 March 1997 was refused by a decision of the Examining Division announced orally on 6 November 2002 and issued in writing on 21 November 2002.

II. The decision of the Examining Division was based on a set of Claims 1 to 9 as main request, and on a set of Claims 1 to 8 as auxiliary request, both submitted at the oral proceedings of 6 November 2002.
Independent Claims 1, 8 and 9 of the main request read as follows:

"1. An extruded film formed from a blend comprising a mixture of a first ethylene/alpha-olefin copolymer and a second ethylene/alpha olefin copolymer, said blend having a flow index in the range of 5 to 50 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.900 to 0.940 grams per cubic centimeter; a weight average molecular weight in the range of 98,000 to 190,000; and an Mw/Mn ratio in the range of 2 to 8; wherein:
said first and second copolymers have about equal molecular weights, each copolymer being a copolymer of ethylene and alpha—olefin having 3 to 8 carbon atoms, the first copolymer has a flow index in the range of 5 to 75 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.860 to 0.930 grams per cubic centimeter; a weight average

molecular weight in the range of 87,000 to 190,000; and an Mw/Mn ratio in the range of 2 to 4, and
the second copolymer has a flow index in the range of 5 to 75 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.935 to 0.970 grams per cubic centimeter; a weight average molecular weight in the range of 87,000 to 190,000; and an Mw/Mn ratio in the range of 2 to 4;
the weight ratio of the first copolymer to the second copolymer being in the range of 70:30 to 30:70, and
wherein the Elmendorf Tear Strength of the film in the machine direction is in the range of 15 to 25 grams per mm (600 to 1000 grams per mil), and
the Elmendorf Tear Strength of the film in the transverse direction is in the range of 18 to 31 grams per mm (700 to 1200 grams per mil)".

8. A process for preparing a film as defined in any one of claims 1 to 5 which comprises mixing the first and second copolymers.

9. A process for preparing a film as defined in Claim 6 which comprises preparing the first copolymer in a first reactor and preparing the second copolymer in a second reactor in series with the first reactor,
wherein, in the first reactor, the mole ratio of alpha-olefin to ethylene is in the range of 0.14 to 0.83:1 and the mole ratio of hydrogen, which is optional, to ethylene is in the range of 0.01:1 to 0.54:1, and, in the second reactor, the mole ratio of alpha-olefin to ethylene is in the range of 0.004:1 to 0.1:1 and the mole ratio of hydrogen to ethylene is in the range of 0.045:1 to 0.68:1."

Claims 2 to 7 of the main request were dependent claims.

Claim 1 of the first auxiliary request read as follows:

"1. A process for preparing an extruded film formed from a blend comprising a mixture of two ethylene/alpha-olefin copolymers, said blend having a flow index in the range of 5 to 50 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.900 to 0.940 grams per cubic centimeter; a weight average molecular weight in the range of 98,000 to 190,000; and an Mw/Mn ratio in the range of 2 to 8; which process comprises:
a) mixing said first and second copolymers having about equal molecular weights, each copolymer being a copolymer of ethylene and alpha—olefin having 3 to 8 carbon atoms,
the first copolymer having a flow index in the range of 5 to 75 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.860 to 0.930 grams per cubic centimeter; a weight average molecular weight in the range of 87,000 to 190,000; and an Mw/Mn ratio in the range of 2 to 4, and
the second copolymer has a flow index in the range of 5 to 75 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.935 to 0.970 grams per cubic centimeter; a weight average molecular weight in the range of 87,000 to 190,000; and an Mw/Mn ratio in the range of 2 to 4;
the weight ratio of the first copolymer to the second copolymer being in the range of 70:30 to 30:70, and
b) extruding the blend to form said film, wherein the Elmendorf Tear Strength of the film in the machine

direction is in the range of 15 to 25 grams per mm (600 to 1000 grams per mil), and
the Elmendorf Tear Strength of the film in the transverse direction is in the range of 18 to 31 grams per mm (700 to 1200 grams per mil)".

Claims 2 to 8 were dependent claims.

The Examining Division refused the application on the grounds that it did not meet the requirements of Article 56 EPC. According to the decision the subject-matter of Claims 1 to 9 of the main request and of Claims 1 to 8 of the auxiliary request were obvious in view of the combination of document D1 (US-A-5 514 455), taken as the closest state of the art, with document D2 (US-A-5 382 631).

III. Notice of Appeal was filed on 20 January 2003 by the Appellant (Applicant) with simultaneous payment of the prescribed fee. With the Statement of Grounds of Appeal filed on 26 March 2003, the Appellant submitted a new main request and four auxiliary requests.

IV. Communications were issued on 10 December 2004 and 30 September 2005 by the Board, in which the Board gave its preliminary view concerning issues under Articles 123(2), 84, 83 and 56 EPC. All these points were addressed by the Appellant in its responses dated respectively 1 June 2005 and 31 January 2006. The letter of 1 June 2005 was accompanied by a new set of Claims 1 to 8 as main request, Claims 3 to 6 of which were further replaced by Claims 3 to 6 as submitted with the letter dated 31 January 2006.

V. In a communication issued on 13 April 2006 accompanying a summons to oral proceedings, the salient issues were identified by the Board as being firstly, whether the amended claims met the requirements of Article 84 EPC, secondly, whether the application met the requirements of Article 83 EPC in view of the process disclosed in Example 1 for the manufacture of the claimed blends, and thirdly as to whether Example 1 might support the presence of inventive step.

VI. With its letter dated 1 September 2006, the Appellant submitted an experimental report and new Claims 3 to 6 in order to replace Claims 3 to 6 then on file. Consequently Claims 1 to 8 of the main request of the Appellant read as follows:

"1. A blend comprising a mixture of a first ethylene/alpha olefin copolymer and a second ethylene/alpha olefin copolymer said blend having a flow index in the range of 5 to 50 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.900 to 0.940 gram per cubic centimetre; a weight average molecular weight in the range of 98,000 to 190,000; and an Mw/Mn ratio of at least 2; wherein:
each copolymer is a copolymer of ethylene and an alpha olefin having 3 to 8 carbon atoms;
the first copolymer has a flow index in the range of 5 to 75 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.860 to 0.930 gram per cubic centimetre; a weight average molecular weight up to 190,000; and an Mw/Mn ratio in the range of 2 to 4;

the second copolymer has a flow index in the range of 5 to 75 grams per 10 minutes; a melt flow ratio in the range of 10 to 50; a density in the range of 0.935 to 0.970 grams per cubic centimetre; a weight average molecular weight up to 190,000; and an Mw/Mn ratio in the range of 2 to 4;
the weight ratio of the first copolymer to the second copolymer is in the range of 70:30 to 30:70;
the weight average molecular weight of the second copolymer is from 90 to l10% of the molecular weight of the first copolymer.

2. The blend defined in Claim 1 wherein the blend has a melt flow ratio in the range of 15 to 35; a density in the range of 0.900 to 0.935 grams per cubic centimetre; and an Mw/Mn ratio in the range of 3 to 6.

3. The blend defined in Claim 1 or 2 wherein the first copolymer has a flow index in the range of 5 to 25 grams per 10 minutes; a weight average molecular weight of up to 190,000; a melt flow ratio in the range of 15 to 40; a density in the range of 0.890 to 0.920 gram per cubic centimetre; and an Mw/Mn ratio in the range 2.5 to 3.5, and the second copolymer has a flow index in the range of 5 to 25 grams per 10 minutes; a weight average molecular weight of up to 190,000; a melt flow ratio in the range of 15 to 40; a density in the range of 0.935 to 0.960 gram per cubic centimetre; and a Mw/Mn ratio in the range of 2.5 to 3.5.

4. The blend defined in any one of the preceding claims wherein the alpha-olefin is 1-hexene.

5. The blend defined in Claim 1 wherein the first copolymer is obtainable by reacting, in a first reactor, the alpha-olefin and ethylene in a mole ratio of alpha-olefin to ethylene in the range of 0.1:1 to 1.6:1 and a mole ratio of hydrogen, which is optional, to ethylene in the range of 0.01:1 to 0.9:1, and the second copolymer is obtainable by reacting, in a second reactor, the alpha-olefin and ethylene in a mole ratio of alpha-olefin to ethylene in the range of 0.004:1 to 0.15:1 and a mole ratio of hydrogen to ethylene in the range of 0.02:1 to 1:1.

6. A film extruded from the blend defined in any one of claims 1 to 5 having an Elmendorf Tear Strength in the machine direction of at least 12.7 grams per millimetre (500 grams per mil).

7. A process for preparing a blend as defined in any one of claims 1 to 5 which comprises mixing the first and second copolymers.

8. A process as defined in Claim 7, wherein the first copolymer and the second copolymer are prepared using a Ziegler Natta catalyst."

VII. Oral proceedings were held before the Board on 6 September 2006.

The arguments presented by the Appellant at the oral proceedings may be summarized as follows:

(i) The claimed blends could be prepared by simple mixing of the two copolymers.

(ii) It was agreed to delete the reference to the in-situ blending in the application in suit.

(iii) The experimental report submitted with the letter dated 1 September 2006 showed that films obtained from the blends according to the application in suit and prepared by simple mixing of the two copolymers achieved a better balance between tear strength in the machine direction and tear strength in the transverse direction than the blends disclosed in D1.

(iv) While the processing conditions for making the films in the Examples of D1 differed from those applied in the experimental report, it should be noted that the processing conditions in the experimental report were more severe, since the die rate and the frost line were much higher.

(v) There was no indication in D1 or D2 that such an improvement of the balance between tear strength in the machine direction and tear strength in the transverse direction could be obtained by using the blends according to the application in suit.

At the end of the oral proceedings, the Board informed the Appellant that the proceedings would be continued in writing, and the Appellant was invited to file a complete description adapted to Claims 1, 2, 7 and 8 submitted with letter dated 1 June 2005 and Claims 3 to 6 filed with letter dated 1 September 2006, within a period of one month.

VIII. With its letter dated 13 October 2006, the Appellant submitted amended pages of the description in order to

replace pages 1, 3 to 9, and 11 to 22 of the description of the original application. After a communication of the Board dated 14 December 2006, the subsequent response of the Appellant dated 16 January 2007, and a further communication of the Board dated 25 January 2007, the Appellant submitted with its letter dated 12 February 2007, a fully retyped version of the application documents consisting of pages 1 to 20 of the description and of Claims 1 to 8.

IX. The Appellant requested that the decision of the Examining Division be set aside, and a patent be granted on the basis of the set of claims consisting of Claims 1 to 8 as submitted with the letter dated 12 February 2007 and on the description consisting of pages 1 to 20 as submitted with letter dated 12 February 2007.

Reasons for the Decision

1. The appeal is admissible.

2. *Wording of the claims*

2.1 Claims 1, 2, 7 and 8 submitted with the letter dated 12 February 2007 correspond to Claims 1, 2, 7 and 8 submitted with letter dated 1 June 2005 and Claims 3 to 5 filed with letter dated 12 February 2007 correspond to Claims 3 to 5 filed with letter dated 1 September 2006. Claim 6 filed with the letter of 12 February 2007 differs from Claim 6 as submitted with letter of 1 September 2006, in that the value of the Elmendorf Tear Strength in the machine direction i.e. 500 grams

per mil has been indicated as corresponding to 19685 grams per millimetre instead of 12.7 grams per millimetre.

2.2 Claim 1 differs from original Claim 1 by (i) the indication that the weight average molecular weight of the second copolymer is from 90 to l10% of the molecular weight of the first copolymer, by (ii) the deletion of the lower limit of the weight average molecular weight of the first and second copolymers (i.e. 87 000) and by (iii) the deletion of the upper limit of the Mw/Mn ratio of the blend (i.e. 8).

2.3 Amendment (i) is supported by lines 44 to 47 on page 6 of the application as originally filed (cf. EP-A1-0 867 473).

2.4 Due to the incorporation of the relationship between the average molecular weight of the two copolymers and the fact that these copolymers are present in weight ratio 70:30 to 30:70, it is hence evident that the original lower limit of the weight average molecular weight of the first and second copolymer is no longer compatible with the lower limit of the weight average molecular weight of the blend (98 000), and that the original higher limit of the Mw/Mn ratio of the blend is no longer compatible with the higher limits of the Mw/Mn ratio of the first and second copolymer. In other words, the incorporation of the feature (i) in Claim 1 implicitly also restricts the range of weight average molecular weight and the range of Mw/Mn ratio of the blend. Consequently, the deletions (ii) and (iii) do not extend the claimed subject-matter beyond the

content of the application as filed (cf. by analogy T 02/80 (OJ EPO 1981, 431) Reasons point 3).

2.5 Claims 2 to 5, 6 and 7 correspond to Claims 2 to 5, 7 and 10 as originally filed. Claim 8 is supported by lines 36 and 45 on page 3 of the application as originally filed.

2.6 Consequently, the requirements of Article 123(2) EPC are met by all the claims.

2.7 The Board is also satisfied that the requirements of Article 84 EPC are met by all the claims.

3. *Sufficiency of disclosure*

3.1 While in the course of the appeal proceedings the Board has raised objections under Article 83 EPC in respect of the possibility to reproduce original Example 1, since there was no indication in the application in suit how to determine the actual properties of the second copolymer when the blend was prepared by in situ blending as disclosed in Example 1, the Board notes that the Appellant has now deleted any reference to the in-situ blending preparation of the claimed blends.

3.2 Since it is evident that the claimed blends can also be prepared by simple mixing of the two copolymers, the Board is satisfied that the requirements of Article 83 EPC are met.

4. *Novelty*

Novelty of the subject-matter of the claims of the application as filed has been acknowledged by the Examining Division in view of documents D1, D2 and D3 (WO-A-94/25523). Since the subject-matter of the present claims 1 to 8 has further been restricted, the Board sees no reason not to consider the subject-matter of Claims 1 to 8 as novel over the cited prior art (Article 54 EPC).

5. *Closest state of the art, the technical problem.*

5.1 The application in suit relates to blends of polyethylene copolymers useful in the manufacture of films by extrusion.

5.2 Such blends are known from D1, which the Board considers as representing the closest state of the art, as did the Appellant and the Examining Division.

5.3 Document D1 relates to blends having been produced in situ by contacting ethylene and at least one alpha-olefin comonomer having 4 to 8 carbon atoms with a magnesium/titanium based catalyst system in each of two reactors connected in series, under polymerization conditions. The polymer formed in the high molecular weight reactor has a flow index in the range of generally 0.01 to 30 g per 10 minutes (preferably 0.8 to 12 g/10 minutes) and a density of at least 0.860 g/cm^3 (preferably in the range of 0.900 to 0.930 g/cm^3) and the polymer formed in the low molecular weight reactor has a melt index in the range of 50 to 3000 g/10 minutes (preferably 50 to 1000 g/10 minutes)

and a density of at least 0.900 g/cm^3 (preferably in the range of 0.910 to 0.955 g/cm^3), the weight ratio of high molecular weight reactor polymer to low molecular weight reactor polymer being in the range of 0.67:1 to 1.5:1. The blend has a melt index in the range of 0.2 to 3.5 g/10 minutes (preferably 0.5 to 2.0 g/10 minutes); a melt flow ratio in the range of 55 to 125; a density of at least 0.915 g/cm^3 (preferably in the range of 0.916 to 0.930 g per cm^3); and an Mw/Mn ratio in the range of 8 to 22 (cf. Claim 1; column 7, line 50 to column 8, line 52).

5.4 The molecular weight of the high molecular weight copolymer is, generally, in the range of 135000 to 445000. The melt flow ratio of the polymer can be in the range of 20 to 70, and is preferably 22 to about 45 (column 8, lines 3 to 10). The molecular weight of the low molecular weight copolymer is, generally, in the range of 15800 to 35000. The melt flow ratio of this copolymer can be in the range of 20 to 70, and is preferably 20 to 45 (column 8, lines 23 to 30). The molecular weight of the blend is, generally, in the range of 90000 to 250000 (column 8, lines 35 to 36).

5.5 The blends are used in the manufacture of films by extrusion. The films exhibit a high Elmendorf tear strength both in the machine direction and the transverse direction (column 9, lines 47 to 54). The examples, however, show that the Elmendorf tear strength is much lower in the machine direction than in the transverse direction.

5.6 Thus, starting from D1 the technical problem underlying the application in suit might be seen in the provision

of blends allowing the manufacture of films by extrusion having a higher Elmendorf tear strength in the machine direction and consequently a good balance of tear strength in both directions.

5.7 According to the patent in suit, this technical problem is solved by using blends of two copolymers as defined in Claim 1 in which the average molecular weight of the second copolymer is 90 to 110% of the molecular weight of the first copolymer.

5.8 In this connection, the Board notes that films prepared from the blend of two ethylene/hexene copolymers disclosed in the experimental report submitted by the Appellant with its letter dated 1 September 2006 exhibit a ratio of Elmendorf tear strength in the machine direction to the Elmendorf Tear Strength in the transverse direction of 0.44.

5.9 In that respect the Board notes that these films have been prepared using the processing conditions disclosed in Example 9 of the application as filed, i.e. in particular, a gauge of 0.85 mils, a blow up ratio of 2.8:1, a die rate of 10 lbs/hr/in and a frost line height of 20 inches, while in Table III of D1 where a blend of two ethylene/hexene copolymers is used for the manufacture of a film using a gauge of 1 mil, a blow up ratio of 2.6:1, a die rate of 2.93 lbs/hr/in and a frost line height of 6.5 inches, the extruded film exhibits a ratio of the Elmendorf tear strength in the machine direction to the Elmendorf tear strength in the transverse direction of 0.14 (i.e. 138 divided by 927).

5.10 While the gauge and the blow up ratio used in the experimental report submitted by the Appellant and in Table III of D1 are very similar, it is true that the die rate and the frost line height strongly differ, so that it might be *prima facie* questionable whether valid conclusions can be drawn from the comparison between the Elmendorf tear strength ratios obtained in the experimental report and in Table III of D1. Nevertheless, in view of the submissions of the Appellant that the conditions applied in that experimental report in terms of die rate and frost line height are far more severe than those used in D1 and that the skilled person would expect that this would negatively influence the tear strength in the machine direction, it is credible to the Board that the claimed measures provide an effective solution to the technical problem.

6. *Inventive step*

6.1 D1, which teaches to use copolymers having very different molecular weights (cf paragraph 5.4 above), cannot itself provide any hint to the solution of the technical problem.

6.2 Document D2 relates to blends of ethylene interpolymer components with narrow molecular weight and composition distributions selected to obtain an overall molecular weight and composition distribution in the resulting blend to impart superior properties thereto. The blends comprise a plurality of linear ethylene interpolymer components wherein each component has a Mw/Mn value less than or equal to 3 and a composition distribution breadth index of 50% or higher. The components for the

blend are linear ethylene interpolymers having the narrow molecular weight and composition distributions mentioned above and the blend components are selected from one of the groups consisting of: (1) linear ethylene interpolymer blend components having substantially the same average molecular weight but different average comonomer contents; (2) linear ethylene interpolymer blend components having substantially the same average comonomer content but different average molecular weights; and (3) linear ethylene interpolymer blend components having different average molecular weights and comonomer contents in which the blend components, taken serially in order of increasing average molecular weight, have an increasing comonomer content (column 3, lines 5 to 37).

6.3 The weight average molecular weight of the LLDPE blend components may range from 10^3 to 10^6 or more depending on the particular end use, preferably from 10^4 to 10^6, and especially from 2.10^4 to 5.10^5. The linear polyethylene blend components preferably have a narrow molecular weight distribution (MWD), i.e. a Mw/Mn of less than or equal to 3.0. Particularly preferred are the linear polyethylene blend components having a Mw/Mn less than or equal to 2.5, and especially less than or equal to 2.0 (column 5, lines 3 to 17).

6.4 According to D2 tear strength may be controlled by blending linear polyethylene resins having substantially the same average molecular weights **but** with different average comonomer contents. In that respect, blend components are considered as having substantially the same molecular weight if the resulting MWD of the blend thereof is similarly narrow

to the MWD of each blend component, i.e. the value of Mw/Mn of the resulting blend is less than or equal to about 3.0, preferably less than about 2.5 (column 6, lines 8 to 29).

6.5 Furthermore, D2 discloses in its Examples 1 and 2 blends obtained from copolymers having similar molecular weights (i.e. 76 700 and 80 400; cf. also Table 1 on column 13, and Table 2 on column 14) as well as the Elmendorf tear strength of **compression molded** sheets made thereof (emphasis by the Board).

6.6 While it is true that D2 generally indicates that the tear strength might be controlled by blending copolymers having similar molecular weights, it is however evident, that D2 is totally silent on the balance of tear strength of extruded films in the machine direction and in the transverse direction.

6.7 This conclusion cannot be altered by the fact that Examples 1 and 2 of D2 disclose the Elmendorf tear strength of the sheets obtained from the blends, since the sheets have been prepared by **compression molding**, so that the Elmendorf tear properties of this sheet cannot give any indication on the balance of tear strength of an **extruded** film in machine direction and in transverse direction.

6.8 Thus, at least for this reason D2 cannot lead to the solution proposed in the application in suit.

6.9 Document D3 (WO-A-94/25523) relates to an ethylene polymer composition, comprising from 10 percent (by

weight of the total composition) to 95 percent (by weight of the total composition) of
(A) at least one homogeneously branched substantially linear ethylene/α-olefin interpolymer having:
a density from 0.88 g/cm^3 to 0.935 g/cm^3,
a molecular weight distribution (Mw/Mn) from 1.8 to 2.8,
a melt index (I_2) from 0.001 g/10 min to 10 g/10 min,
no linear polymer fraction, and
a single melting peak as measured using differential scanning calorimetry; and

(B) from 5 percent (by weight of the total composition) to 90 percent (by weight of the total composition) of at least one heterogeneously branched ethylene polymer having a density from 0.91 g/cm^3 to 0.965 g/cm^3
(Claim 1).

6.10 These compositions are used in the manufacture of films by extrusion (page 14, line 14 to page 15, line 24; Examples 1, 2, 4, and 6).

6.11 Although D3 discloses in its Examples 1, 2, 4 and 6 extruded films exhibiting a ratio between the Elmendorf values in the machine direction (MD) and in the cross direction (CD) of respectively 0.463, 0.382, 0.503 and 0.500, it is however evident that there is no general teaching in D3 concerning the influence of the respective molecular weights of the copolymers used in the blends on the Elmendorf values in both the machine and the transverse directions.

6.12 Furthermore, even if one would consider, as done by the Examining Division in its communication of 10 January

2001, that the copolymers used in Example 1 of D3 would inevitably have exhibited similar molecular weights in view of the similarity of their melt indices, this would not, in the Board's view, suggest to the skilled person that the similarity in molecular weights of the copolymers of the blends might be a relevant factor for obtaining extruded films with an improved balance between the Elmendorf Tear Strength in the machine direction and the Elmendorf Tear Strength in the transverse direction from blends of a first and second copolymers as defined in the application in suit. This is because a better balance is obtained in Examples 4 and 6 of D3, in which it can be deduced, on the basis of the melt indices indicated for the resulting blends (respectively 1.05 and 0.53) and for the second copolymers (respectively 1.6 and 1.5), that the first and the second copolymer inevitably exhibit no similarity in melt indices and, hence, no similarity in molecular weights.

6.13 It thus follows from the above that D3 is of no help for the solution of the technical problem.

6.14 Consequently, the subject-matter of Claim 1, and by the same token that of Claims 2 to 8 involves an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to grant a patent on the basis of the following documents:

   Description: pages 1 to 20 as submitted with letter dated 12 February 2007;

   Claims: Claims 1 to 8 as submitted with the letter dated 12 February 2007.

The Registrar: The Chairman:

E. Görgmaier R. Young