

Trial decision

Invalidation No. 2012-800177

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The patent invalidation trial case regarding the invalidation of Japanese Patent No. 3,593,817, entitled "WHITE POLYESTER FILM," between the parties above has resulted in the following trial decision:

Conclusion

The correction shall be approved as requested.

The patents regarding the inventions according to Claims 1 to 6 of Patent No. 3,593,817 shall be invalidated.

The costs in connection with the trial shall be borne by the demandee.

Reason

No. 1 History of the procedures

The application for the inventions according to Claims 1 to 6 of the Patent No. 3,593,817 was filed with a filing date of September 27, 1996 as Japanese Patent Application No. 8-255935, and a patent right was established on September 10, 2004 (The number of claims: 6).

In response, Demandant, TEIJIN LIMITED, made a demand for invalidation trial on October 26, 2012 against the patents of the inventions according to Claims 1 to 6 of Patent No. 3,593,817, and Demandee, TORAY INDUSTRIES, INC., submitted a written reply on January 29, 2013. On March 13, 2013, matters to be examined were notified, and on May 2, Oral proceedings statement briefs were submitted by Demandant and Demandee. On May 13, written statements were filed by Demandant and Demandee. On May 17, a first oral proceeding was held. On June 3, a preliminary notice of trial decision was issued. On August 6, a correction demand and a written statement were submitted by Demandee.

No. 2 The approval or disapproval of the Correction

The object of demand and the content of the correction in the written correction request made on August 6, 2013 by Demandee (hereinafter referred to as "the Correction") are respectively set forth as below, according to the description of the written correction request:

2-1. Object of the demand

The specification and the claims of Patent No. 3,593,817 (hereinafter collectively referred to as "the specification etc.") are requested to be corrected for each group of claims as in the corrected specification and the corrected scope of claims attached to the written correction request (hereinafter collectively referred to as "the corrected specification, etc.").

2-2. Content of Correction

Correction A

The term "white polyester film" in Claim 1 of the claims is corrected to

"biaxially-stretched white polyester film" (Claim 2, Claim 3, Claim 4, Claim 5, and Claim 6 depending on Claim 1 are identically corrected).

Correction B

The term "white polyester film" in paragraph [0007] of the specification attached to the application is corrected to "biaxially-stretched white polyester film."

2-3. The judgment by the body about the Correction

(1) The requirement that a request for correction be made for each group of claims

According to "6 Statement of the demand" of the written correction request, the Correction relates to "the correction according to a group of claims consisting of Claims 1 to 6," whereas, according to the corrected specification, etc., Claims 2 to 6 in the scope of the claims directly or indirectly depend on Claim 1. Therefore, the Correction is made for a group of claims.

Therefore, the Correction complies with the provision of Article 134bis(3) of the Patent Act.

(2) Regarding correction A

Correction A is intended to limit "white polyester film" recited in Claim 1 before the correction to "biaxially-stretched white polyester film." Therefore, Correction A is intended to restrict the scope of the claims as specified in item (i) of the proviso to Article 134bis(1) of the Patent Act.

Further, the specification, etc. discloses in paragraph [0034] that "To illustrate a specific manufacturing method of film consisting of polyester composition of the present invention, a polyester composition is dried and then subjected to melt extrusion to obtain an unstretched sheet, which is followed by biaxial stretching and heat treatment to form a film." Therefore, Correction A is made within a scope of matters described in the specification, etc., and it does not substantially expand or change the scope of claims, and thus complies with the provisions of Articles 126(5) and 126(6) as applied mutatis mutandis to Article 134bis(9) of the Patent Act.

Further, the matters of correction to correct "white polyester film" of Claim 2, Claim 3, Claim 4, Claim 5, and Claim 6 that depend on Claim 1 to "biaxially-stretched white polyester film" is also intended to restrict the scope of the claims similar to the matters of correction in the above Claim 1 and falling within the scope of the description of the specification, etc. Thus it neither substantially expands nor changes

the scope of the claims.

(3) Regarding correction B

Correction B is intended to make the description in the Detailed Description of the Invention consistent with the recitation of the Claims, which becomes necessary in association with Correction A. Thus it corresponds to a correction for the purpose of clarification of ambiguous statement as provided in item (iii) of the proviso to Article 134bis(1) of the Patent Act.

Further, the correction does not correspond to the substantial expansion or change of the scope of the claims and obviously falls within the scope of the matter described in the specification, Claims, or drawings as attached to the application. Therefore, the correction with regard to correction B complies with the provisions of Articles 126(5) and (6) of the Patent Act as applied *mutatis mutandis* to Article 134bis(9) of the Patent Act.

(4) Closing

As discussed in items (1) to (3), the correction by the demand for correction is aimed at the matter listed in the item (i) or (iii) of the proviso to Article 134bis(1) of the Patent Act, and complies with the provision of Articles 126(4) to (7) of the Patent Act as applied *mutatis mutandis* pursuant to Article 134bis(9) of the Patent Act. Therefore, the correction should be accepted.

No. 3 The patent invention

As a result of the Correction, the inventions according to Claims 1 to 6 of the Patent (hereinafter referred to as "patent Invention 1" to "patent invention 6") are specified by the matters recited in Claims 1 to 6 of the scope of claims of the corrected specification, etc. as in the following:

"[Claim 1] A biaxially-stretched white polyester film consisting of a polyester composition comprising 5% by weight or more of an inorganic particle, wherein a concentration of carboxyl terminal group of the polyester composition is 35 equivalent/10⁶ g polyester or less, and a difference between a crystallization temperature on heating (T_{cc}) and a glass transition temperature (T_g) satisfies the following formula:
 $30 \leq T_{cc} - T_g \leq 60$

[Claim 2] The biaxially-stretched white polyester film consisting of a polyester composition of Claim 1, wherein the inorganic particle is at least one kind of particle selected from the group consisting of metal carbonate, silicate compounds, barium sulfate, and zinc sulfide.

[Claim 3] The biaxially-stretched white polyester film consisting of a polyester composition of Claim 1 or 2, wherein the polyester is a copolymeric polyester.

[Claim 4] The biaxially-stretched white polyester film consisting of a polyester composition of Claim 3, wherein the copolymeric polyester is obtained by polymerizing at least one kind of component selected from the group consisting of aromatic dicarboxylic acid, aliphatic dicarboxylic acid, cycloaliphatic dicarboxylic acid, aliphatic diols, and cycloaliphatic diols.

[Claim 5] The biaxially-stretched white polyester film consisting of a polyester composition of any one of Claims 1 to 4, wherein a melting point of polyester is 240°C or more.

[Claim 6] The biaxially-stretched white polyester film consisting of a polyester composition of any one of Claims 1 to 5, wherein the polyester composition contains 50 ppm or more of elemental phosphorus."

No. 4 The demandant's allegation and Means of proof

4-1. Outline of the demandant's allegation

Demandant demands for trial with an object of "Patent No. 3,593,817 should be invalidated. The costs in connection with the trial shall be borne by the demandee." and submits the following Evidence A No. 1 to No. 11 and reference material 1 as means of proof and argues that the patent according to the patent inventions 1 to 6 should be invalidated. The reasons for invalidation are as follows:

(1) Reasons for invalidation 1

Since the patent inventions 1 to 6 are described in Evidence A No. 1, they correspond to Article 29(1)(iii) of the Patent Act, and thus are not patentable (hereinafter referred to as "invalidation reason 1-1").

Otherwise, the patent inventions 1 to 6 are described in Evidence A No. 5. Therefore, they correspond to Article 29(1)(iii) of the Patent Act, and thus are not patentable (hereinafter referred to as "invalidation reason 1-2").

(2) Reasons for invalidation 2

A person skilled in the art could have easily conceived of the patent inventions 1 to 6 on the basis of the invention described in at least any of Evidence A No. 1 to No. 4 in combination with the inventions described in Evidence A No. 5 to No. 7, and thus these inventions could not be granted patents under the provision of Article 29(2) of the Patent Act, and thus are not patentable.

Further, a person skilled in the art could have easily conceived of the patent inventions 1 to 6 on the basis of the invention described in Evidence A No. 7 and any of the invention described in Evidence A No. 5, Evidence A No. 6, Evidence A No. 8, and Evidence A No. 9, and thus these inventions could not be granted patents under the provision of Article 29(2) of the Patent Act, and thus are not patentable.

(3) Reasons for invalidation 3

The application according to the Patent has deficiency in the scope of claims, and thus does not satisfy the requirement of Article 36(6)(i) of the Patent Act.

(4) Reasons for invalidation 4

The application according to the Patent has deficiency in the Detailed Description of the Invention, and thus does not satisfy the requirement of Article 36(4) of the Patent Act.

(5) Reasons for invalidation 5

The application according to the Patent has deficiency in the scope of claims, and thus does not satisfy the requirement of Article 36(6)(ii) of the Patent Act.

4-2. Evidence

Evidence A No. 1: Japanese Unexamined Patent Application Publication No. 7-331038

Evidence A No. 2: Japanese Unexamined Patent Application Publication No. 7-316404

Evidence A No. 3: Japanese Unexamined Patent Application Publication No. 8-143756

Evidence A No. 4: Japanese Unexamined Patent Application Publication No. 62-207337

Evidence A No. 5: Japanese Unexamined Patent Application Publication No. 6-157877

Evidence A No. 6: Japanese Unexamined Patent Application Publication No. 4-1224

Evidence A No. 7: Japanese Unexamined Patent Application Publication No. 6-210720

Evidence A No. 8: Edited by Kazuo Yuki, "Handbook of saturated polyester resin", First edition, first printing,

NIKKAN KOGYO SHIMBUN, LTD., December 22, 1989, pages 676 to 677

Evidence A No. 9: Japanese Unexamined Patent Application Publication No. 8-245771

Evidence A No. 10: Certificate of experimental results (on October 24, 2012,

Experimenter: TEIJIN LIMITED, Technical Development Department for Raw Materials and Polymerization, Polymerization Technique Development Division, Kameoka Akira)

Reference Material 1: Japanese Unexamined Patent Application Publication No. 9-272793

All the above are attached to written demand for trial.

Evidence A No. 11: Certificate of experimental results (Part 2) (on April 23, 2013, Experimenter: TEIJIN LIMITED, Technical Development Department for Raw Materials and Polymerization, Polymerization Technique Development Division, Kameoka Akira)

All the above are attached to the oral proceedings statement brief.

No. 5 The demandee's allegation and Means of proof

5-1. Outline of the demandee's allegation

Demandee submitted a written reply on January 29, 2013 with an object of the reply "seeking for a trial decision to the effect that the demand for trial should be rejected and a cost for trial should be borne by demandant," and submitted the following Evidence B No. 1 to No. 9 as means of proof with an argument that none of the patents according to the patent inventions 1 to 6 should be invalidated.

5-2. Evidence

Evidence B No. 1: Japanese Unexamined Patent Application Publication No. 9-165501

Evidence B No. 2: Japanese Unexamined Patent Application Publication No. 9-52335

Evidence B No. 3: Japanese Unexamined Patent Application Publication No. 9-85918

All the above are attached to the Oral proceedings statement brief.

Evidence B No. 4: Certificate of experimental results (dated May 9, 2013 and prepared by Chief Research Officer, Masatoshi Aoyama, of TORAY INDUSTRIES, INC., Film Laboratory)

All the above are attached to the written statement of May 13, 2013.

Evidence B No. 5: Certificate of experimental results (dated August 2, 2013 and prepared by Chief Research Officer, Masatoshi Aoyama, of TORAY INDUSTRIES,

INC., Film laboratory)

Evidence B No. 6: Japanese Unexamined Patent Application Publication No. 2010-254779

Evidence B No. 7: Japanese Unexamined Patent Application Publication No. 62-235353

Evidence B No. 8: Certificate of experimental results (dated July 31, 2013 and prepared by research fellow, Takuji Higashioji, of TORAY INDUSTRIES, INC., Film laboratory)

Evidence B No. 9: Certificate of experimental results (dated August 2, 2013 and prepared by Chief Research Officer, Masatoshi Aoyama, of TORAY INDUSTRIES, INC., Film laboratory)

All the above are attached to the written statement of August 6, 2013.

No. 6 Determination by the body about invalidation reason 1-1

A consideration is given as to whether or not the patent inventions 1 to 6 are described in Evidence A No. 1.

6-1. Description of Evidence A No. 1 and No. 10

(1) Description of Evidence A No. 1

Evidence A No. 1 has the following descriptions:

(Point 1a)

"[Claim 1] A modifier for polyester-based resin consisting of calcium carbonate powder, a surface of which is treated with at least one kind of phosphoric compound selected from the group consisting of phosphoric acid, phosphorous acid, phosphine acid, phosphonic acid, and alkyl ester compounds thereof with a carbon number of 3 or less.

...

[Claim 3] The modifier for polyester-based resin of Claim 1 or 2, the modifier comprising 100 to 30000 ppm of elemental phosphorus.

[Claim 4] A polyester composition comprising the modifier for polyester-based resin of any one of Claims 1 to 3.

[Claim 5] The polyester composition of Claim 4, wherein the content of the modifier exceeds 5% by weight and is 80% by weight or less.

...

[Claim 8] A film consisting of the polyester composition of any one of Claims 4 to 6.

[Claim 9] A white film, wherein the film of Claim 8 is white." (Claim 1, Claims 3 to 5, and Claims 8 to 9 of the scope of claims)

(Point 1b)

"The polyester of the present invention may be produced by the esterification or ester exchange reaction of dicarboxylic acid or ester-forming derivatives with diols, and subsequent polycondensation reaction. The kinds of polyesters are not particularly limited as long as they can be formed into fiber, membrane, and any other molded products. Polyesters suitable for molding fiber, film, and any other molded products may use an aromatic dicarboxylic acid as a dicarboxylic acid component including, for example, polyethylene terephthalate, polyethylene-p-oxybenzoate, polyethylene-1,2-bis(2-chlorophenoxy)ethane-4,4'-dicarboxylate, polyethylene-1,2-bis(phenoxy)ethane-4,4'-dicarboxylate, polyethylene-2,6-naphthalene carboxylate, polybutylene terephthalate, and polycyclohexanedimethylene terephthalate. Of these, polyethylene terephthalate is preferred. Of course, these polyesters may be homopolyesters or copolyesters. The copolymerizable monomer may include, for example, dicarboxylic acid or ester-forming derivatives thereof such as adipic acid, sebacic acid, dimer acid, phthalic acid, isophthalic acid, 2,6-naphthalene dicarboxylic acid, 5-sodium sulfoisophthalate, diphenyl dicarboxylic acid, and diphenyl sulfone 4,4'- dicarboxylic acid; polyfunctional carboxylic acid or ester-forming derivatives thereof such as trimellitic acid and pyromellitic acid; oxycarboxylic acid or ester-forming derivatives thereof such as p-oxyethoxybenzoic acid; and further ethylene glycol, butane diol, propylene glycol, diethylene glycol, neopentyl glycol, p-xylylene glycol, 1,4-cyclohexanedimethanol, 1,3-cyclohexanedimethanol, or polyalkylene glycols with an average molecular weight of 200 to 20000." (paragraph [0012])

(Point 1c)

"To illustrate a specific manufacturing method of film consisting of polyester composition of the present invention, a polyester film is dried and then subjected to melt extrusion to obtain an unstretched sheet, which is followed by biaxial stretching and heat treatment to form a film. Biaxial stretching may be either MD/TD sequential stretching or biaxial simultaneous stretching. The draw ratio is not particularly limited, but usually 2.0 to 5.0 times is appropriate for MD and TD, respectively. Further, after biaxial stretching, it may be stretched again in either MD or TD. In such a case, the polyester composition of the present invention and various polyesters may be mixed to

change the content of modifier consisting of calcium carbonate as necessary according to its purpose. Further, various polyesters to be mixed may be the same as or different from a polyester as a base of a polyester composition of the present invention."

(paragraph [0026])

(Point 1d)

"The film of the present invention may be obtained from a polyester composition by the aforementioned method. The film of the present invention is not particularly limited, but in order to obtain a biaxially stretched film with excellent whiteness, gloss, and concealment, the content of modifier consisting of calcium carbonate in a film is preferably more than 5% by weight and 40% by weight or less, and further preferably 7 to 30% by weight and particularly preferably 10 to 20% by weight. If the content of modifier is 5% by weight or less, the resultant film has poor whiteness and concealment and thus may not be preferable. If the content of modifier is more than 40% by weight, the resultant film has poor mechanical properties and thus may not be preferable. Further, the density of the film is preferably from 0.80 to 1.38 g/cm³. If the density is less than 0.80 g/cm³, the resultant film has poor productivity and mechanical properties, and if the density is more than 1.38 g/cm³, the resultant film has poor whiteness and concealment and thus may not be preferable." (paragraph [0027])

(Point 1e)

"Example 1

Calcium carbonate powder with an average particle size of 1.2 μm and a specific surface area of 8.0 m²/g was fed into a Henschel mixer with a fixed container, and temperature was elevated while stirring at a rotation speed of rotary blades of 1500 rpm, and at a time point when an inner can temperature reaches 90°C, a phosphorus compound of trimethyl phosphate was added by spraying so that trimethyl phosphate might amount to 5% by weight on a calcium carbonate basis. Thereafter it was mixed for 10 minutes and subjected to a surface treatment. The amount of elemental phosphorus of the resultant modifier was measured by the colorimeter method and found to be 7700 ppm.

The resultant modifier of 30 weight parts and 70 weight parts of polyethylene terephthalate with a unique viscosity of 0.65 dl/g were mixed and supplied to a vent-type biaxial extruder and kneaded at a temperature of 290°C for a residence time of 5 minutes to obtain a polyethylene terephthalate comprising 30% by weight of modifier.

No foreign matter was found in kneading and no foaming was observed. Further, the particle dispersibility of calcium carbonate in an obtained composition was good. Further, the amount of elemental phosphorus in a composition was measured by the colorimeter method and found to be 1350 ppm.

Polyethylene terephthalate comprising 30% by weight of the obtained modifier was mixed with polyethylene terephthalate with an intrinsic viscosity of 0.65 dl/g so that the modifier may amount to 15% by weight, and further mixed with 0.02 parts by weight of fluorescent brightener 'OB-1' (manufactured by Eastman Chemical Company) on 100 parts of total polyester. Subsequent to sufficient drying, the mixture was fed to an extruder at 290°C to melt and was extruded into a sheet through a T-shaped die and cooled and solidified in a cooling drum at 30°C to obtain an unstretched film. Subsequently, the unstretched film was heated to 95°C and stretched by 3.3 times in a machine direction and further heated to 100°C by 3.3 times in a traverse direction, and heated to 200°C to obtain a film with a thickness of 50 µm. The properties of the resultant film are shown in Table 1. The density was 1.25 g/cm³ and the film had excellent whiteness, concealment, and gloss.

Comparative Example 1

Polyethylene terephthalate and its film comprising 30% by weight of calcium carbonate were obtained by a vent-type biaxial extruder in a similar manner to Example 1, except that calcium carbonate was not subjected to the surface treatment with phosphorus compound. The polymer generated foaming in producing polyethylene terephthalate comprising 30% by weight of calcium carbonate by use of a vent-type biaxial extruder, and the resultant composition had poor particle dispersibility of calcium carbonate. Further, a film broke severely due to foaming in producing the film. The obtained film had poor whiteness, concealment, and gloss.

Examples 2 to 11

As described in Tables 1 and 2, a modifier was manufactured in a similar manner to Example 1 by changing the kind of calcium carbonate and the kind and amount of phosphorus compound. The modifier was used to obtain a polyester composition and a film. Tables 1 and 2 show results of various properties. Examples 2 to 11 fall within the scope of the invention. Calcium carbonate in the obtained polyester had good particle dispersibility and the film had excellent whiteness and concealment.

[Table 1]

	炭酸カルシウム		表面処理のリン化合物		改質剤	ポリエステル組成物		
	平均粒子径 (μm)	比表面積 (m^2/g)	種 類	添加量 (重量%対炭酸カルシウム)	リン元素量 (ppm)	改質剤含有量 (重量%)	粒子分散性	リン元素量 (ppm)
実施例 1	1.2	8.0	TMPA	5.0	7700	30	○	1350
" 2	1.2	8.0	TMPA	1.0	1300	30	○	330
" 3	1.2	8.0	TMPA	10.0	15000	30	○	2200
" 4	1.2	8.0	PA	5.0	12500	30	○	3600
" 5	3.0	4.5	TMPA	2.5	2300	30	○	560
" 6	0.8	13.0	MMPA	5.0	11200	6	○	570
" 7	2.0	7.0	TMPA	5.0	6600	15	○	630
" 8	1.2	8.0	TMPA	5.0	7700	50	○	2700
" 9	1.2	8.0	TMPA	5.0	7700	70	○~△	3600
" 10	1.2	8.0	TMPA	21.0	38000	30	△	10800
" 11	1.2	8.0	TMPA	5.0	7700	85	△	5800
比較例 1	1.2	8.0	—	—	—	30	×	—

TMPA : リン酸トリメチル
 PA : リン酸
 MMPA : リン酸モノメチル

炭酸カルシウム Calcium carbonate

表面処理のリン化合物 Phosphorus compound for surface treatment

改質剤 Modifier

ポリエステル組成物 Polyester composition

平均粒子径 Average particle size

比表面積 Specific surface area

種類 Kinds

添加量 (重量%対炭酸カルシウム) Additive amount (% by weight on a calcium carbonate basis)

リン元素量 Amount of elemental phosphorus

改質剤含有量 (重量%) Content of modifier (% by weight)

粒子分散性 Particle dispersibility

実施例 Example

比較例 Comparative Example

リン酸トリメチル Trimethyl phosphate

リン酸 Phosphoric acid

リン酸モノメチル Monomethyl phosphate

[Table 2]

	フィルム				
	改質剤含有量 (重量%)	密度 (g/cm ³)	白度 (%)	O・D (-)	光沢度 (%)
実施例 1	15.0	1.25	95	0.8	26
" 2	15.0	1.20	93	0.7	26
" 3	15.0	1.20	97	0.8	27
" 4	15.0	1.26	96	0.8	23
" 5	15.0	1.28	91	0.5	11
" 6	6.0	1.35	75	0.2	88
" 7	15.0	1.21	92	0.6	14
" 8	15.0	1.28	96	0.8	26
" 9	30.0	1.18	99	1.1	13
" 10	15.0	1.37	88	0.4	15
" 11	15.0	1.38	87	0.4	13
比較例 1	15.0	1.39	79	0.3	<10

フィルム Film

改質剤含有量 (重量%) Content of modifier (% by weight)

密度 Density

白度 Whiteness

光沢度 Gloss level

実施例 Example

比較例 Comparative Example

" (Paragraphs [0038] and [0044])

(Point 1f)

"Example 12

By use of a catalyst of 0.09 weight part of calcium acetate, 70 weight parts of dimethyl terephthalate and 60 weight parts of ethylene glycol were subjected to an ester exchange reaction in accordance with a conventional means, and 60 weight parts of ethylene glycol slurry containing 50% by weight of the modifier produced in Example 1 was added, followed by the addition of 0.04 weight part of antimony trioxide as a polymerization catalyst.

[0045] Thereafter, a polycondensation reaction was conducted under a high temperature and a reduced pressure by conventional means to obtain a polyester composition. The amount of elemental phosphorus in the polyester composition was 1850 ppm. As a result of observation of particle dispersed state of calcium carbonate, aggregated particles and coarse particles were not observed.

[0046] Polyethylene terephthalate comprising 30% by weight of the obtained modifier was mixed with polyethylene terephthalate having an intrinsic viscosity of 0.65 dl/g so that the modifier might amount to 15% by weight, and further mixed with 0.02 parts by weight of fluorescent brightener 'OB-1' (manufactured by Eastman Chemical Company) on a total of 100 parts of polyester. Subsequent to sufficient drying, the mixture was fed to an extruder at 290°C to melt and was extruded into a sheet through a T-shaped die and cooled and solidified in a cooling drum at 30°C to obtain an unstretched film. Subsequently, the unstretched film was heated to 95°C and stretched by 3.3 times in a machine direction and further heated to 100°C by 3.3 times in a traverse direction, and heated to 200°C to obtain a film with a thickness of 50 μm. The obtained film had the following properties: density of 1.23 g/cm³, whiteness of 97%, OD of 0.9, and gloss of 28%, and had excellent whiteness, concealment, and gloss." (paragraphs [0044] to [0046])

(2) Description of Evidence A No. 10

Evidence A No. 10 has the following descriptions:

(Point 2a)

"2. Experimental target

(1) Experiment 1: Replication study of Example 12 of Japanese Unexamined Patent Application Publication No. 7-331038

...

3. Experimental procedure and result

(1) Experiment 1

(1-1) Experimental procedure

Calcium carbonate powder with an average particle size of 1.2 μm and a specific surface area of 8.0 m^2/g was fed into a Henschel mixer with a fixed container, and a temperature was elevated while stirring at a rotation speed of rotary blades of 1500 rpm, and at a time point when an inner can temperature reached 90°C, trimethyl phosphate was added by spraying so that trimethyl phosphate might amount to 5% by weight on a calcium carbonate basis. Thereafter it was mixed for 10 minutes and subjected to a surface treatment to obtain a modifier.

By use of catalyst of 0.09 parts by weight of calcium acetate, 70 parts by weight of dimethyl terephthalate and 60 parts by weight of ethylene glycol were subjected to an ester exchange reaction in accordance with a conventional means, and 60 parts by weight of ethylene glycol slurry containing 50% by weight of the above modifier was added, followed by the addition of 0.04 parts by weight of antimony trioxide as a polymerization catalyst.

Thereafter, a polycondensation reaction was conducted under a high temperature and a reduced pressure by conventional means to obtain a polyester composition. For polycondensation reaction temperature, three levels were adopted: 275°C (Experiment 1-1), 285°C (Experiment 1-2), and 295°C (Experiment 1-3), which were used in the conventional means.

(1-2) Measurement

The measurement was conducted in accordance with the method described in Patent No. 3,593,817 as follows.

A. Particle diameter of inorganic particle

Particle diameter was measured by supercentrifugal particle distribution measurement device CAPA-500, manufactured by HORIBA, Ltd.

B. Amount of elemental phosphorus

Inorganic particle was subjected to a wet digestion by an acid, and measured by the phosphorus molybdenum blue colorimetric method.

C. Intrinsic viscosity of polyester

It was measured at 25°C by use of o-chlorophenol solvent.

D. Concentration of terminal carboxyl group of polyester composition

It was determined according to the Maurice method. A polyester composition (2 g) was dissolved in 50 ml of o-cresol/chloroform (weight ratio 7:3), followed by titration by an N/20-NaOH methanol solution to measure a concentration of terminal carboxyl group, which was converted into a value of equivalent/10⁶ g polyester.

E. Thermal properties of polyester composition

(i) A diffraction scanning calorimeter (manufactured by Perkin Elmer, Diamond DSC) was used with heating at a temperature elevation rate of 16°C/min to 300°C to melt. Subsequent to quenching, the composition was heated again up to 300°C to measure a glass transition temperature (T_g), crystallization temperature on heating (T_{cc}), and melting point (T_m).

(ii) A diffraction scanning calorimeter (manufactured by Perkin Elmer, Diamond DSC) was used to heat 10 mg of sample in nitrogen gas flow at a temperature elevation rate of 20°C/min from room temperature and keep at 290°C for 5 minutes to melt, immediately followed by quenching with liquid nitrogen, and then heating again at a rate of 20°C/min to measure a glass transition temperature (T_g), crystallization temperature on heating (T_{cc}), and melting point (T_m).

For reference, this method (ii) complied with the method described in the paragraph [0030] of Japanese Unexamined Patent Application Publication No. 6-210720.

(1-3) Experimental results

The results of the obtained polyester composition are shown in Table 1.

Table 1

測定項目		実験 1 - 1		実験 1 - 2		実験 1 - 3	
重縮合温度 °C		275		285		295	
粒子含有量 重量%		30		30		30	
固有粘度 dl / g		0.55		0.50		0.50	
末端カルボキシル基量 当量 / 10 ⁶ g		14		24		30	
※ 熱 特 性	ガラス転移温度 °C	75	78	76	77	75	75
	昇温結晶化温度 °C	132	137	130	133	127	132
	融点 °C	251	253	250	252	248	249
	(T _{cc} - T _g) °C	57	59	54	56	52	57

測定項目 Measurement item

実験 Experiment

重縮合温度 Polycondensation temperature

粒子含有量	Particle Content
重量%	Percent by weight
固有粘度	Intrinsic viscosity
末端カルボキシル基量	Amount of terminal carboxyl group
当量	Equivalent
熱特性	Thermal properties
ガラス転移温度	Glass transition temperature
昇温結晶化温度	Crystallization temperature on heating
融点	Melting point

* For each experiment, numerical values in the left column were obtained by the E.(i) method (a temperature elevation rate of 16°C/min) and numerical values in the right column were obtained by the E.(ii) method (a temperature elevation rate of 20°C/min)."

6-2. The Invention described in Evidence A No. 1

The body finds that Evidence A No. 1 describes "a white film consisting of polyester composition comprising more than 5% by weight to 80% by weight or less of a modifier for polyester-based resin consisting of calcium carbonate powder, a surface of which is treated with at least one kind of phosphoric compound selected from the group consisting of phosphoric acid, phosphorous acid, phosphine acid, phosphonic acid, and alkyl ester compounds thereof with a carbon number of 3 or less" (Point 1a), and describes a white polyester film consisting of the polyester composition in the Example of Detailed Description of the Invention of Evidence A No. 1 (including a polyester composition obtained in the paragraph [0045] of Example 12) as a specific embodiment of white film consisting of the polyester composition (Points 1e and 1f).

Therefore, Evidence A No. 1 discloses the invention of "a white polyester film consisting of polyester composition comprising more than 5% by weight to 80% by weight or less of a modifier for polyester-based resin consisting of calcium carbonate powder, a surface of which is treated with at least one kind of phosphoric compound selected from the group consisting of phosphoric acid, phosphorous acid, phosphine acid, phosphonic acid, and alkyl ester compounds thereof with a carbon number of 3 or less, wherein the white polyester film encompasses an embodiment of a white polyester film consisting of the polyester composition obtained in paragraph [0045] of Example 12" (hereinafter referred to as "cited invention").

Regarding such finding, there are Demandee's counterargument and Demandant's surrebuttal as to whether Experiment 1 of Evidence A No. 10 might correspond to a replication study of Example 12 of Evidence A No. 1. Thus, consideration is given as follows.

It can be seen from the points 1e and 1f that Evidence A No. 1 describes in the paragraph [0045] of Example 12 a polyester composition comprising 30% by weight of calcium carbonate which has been subjected to a surface treatment with phosphorus compound, and the polyester composition obtained in the paragraph [0045] of Example 12 satisfies the aforesaid requirement of "polyester composition comprising more than 5% by weight to 80% by weight or less of a modifier for polyester-based resin consisting of calcium carbonate powder, a surface of which is treated with at least one kind of phosphoric compound selected from the group consisting of phosphoric acid, phosphorous acid, phosphine acid, phosphonic acid, and alkyl ester compounds thereof with a carbon number of 3 or less."

Based on the above, a consideration is given as to whether Evidence A No. 1 might describe or substantially describe a white polyester film consisting of the polyester composition obtained in paragraph [0045] of Example 12, Demandee argues in the written reply as follows: (Written reply, "7 Reason," "(2) The patent invention," "(3) Description of Evidence A," and "(4) Counterargument against Demandant's allegation (4-1) Against reason of demand (i) (lack of novelty)").

"The invention according to Claim 1 of the Patent may be divided into the following constituent components:

Constituent component (a) A polyester composition comprising 5% by weight or more of an inorganic particle

Constituent component (b) Concentration of terminal carboxyl group of polyester composition is 35 equivalent/ 10^6 g polyester or less

Constituent component (c) A polyester composition satisfying $30 \leq T_{cc} - T_g \leq 60$

Constituent component (d) A white polyester film consisting of the above polyester composition" (page 4, lines 2 to 7)

"Evidence A No. 10 (Certificate of experimental results)

The certificate of experimental results allegedly describes the replication study of Example 12 of Evidence A No. 1 (Experiment 1) and the replication study of

Example 4 of Evidence A No. 5 (Experiment 2).

However, Experiment 1 of Evidence A No. 10 is not a replication study of Example 12 of Evidence A No. 1. Specifically, Experiment 1 made an assessment of the polyester composition obtained in [0045] of Evidence A No. 1; however, this polyester composition is an intermediate. The white film of Example 12 undergoes the subsequent second process described in [0046]; i.e. "Polyethylene terephthalate comprising 30% by weight of the obtained modifier was mixed with polyethylene terephthalate with an intrinsic viscosity of 0.65 dl/g so that the modifier might amount to 15% by weight, and further mixed with 0.02 weight part of fluorescent brightener 'OB-1' (manufactured by Eastman Chemical Company) on a total of 100 parts of polyester. Subsequent to sufficient drying, ..." (underlined for emphasis) to produce a polyester composition served for a film preparation. It is obvious that the equal amount of "polyethylene terephthalate with an intrinsic viscosity of 0.65 dl/g" to be added affects the concentration of terminal carboxyl group, crystallization temperature on heating (Tcc) and glass transition temperature (Tg). The patent invention is directed to a white film consisting of a polyester composition that satisfies the constituent components (a) to (c), as is described in Claim 1 or [0030] that "a film made from ... a polyester composition comprising an inorganic particle." In comparison to this, needless to say, it makes no sense to assess an intermediate, which is not a final polyester composition." (page 10, lines 1 to 19)

"(4) Counterargument against Demandant's allegation

(4-1) Against the reason for demand (i) (lack of novelty)

Demandant argues that Example 12 of Evidence A No. 1 is identical to the patented invention. Demandant admits that Evidence A No. 1 fails to disclose the constituent features (b) and (c) of the patent invention, but argues on the basis of the reproductive experiment described in Experiment 1 of the certificate of experimental results of Evidence A No. 10 that the film described in Example 12 of Evidence A No. 1 complies with the constituent features (b) and (c).

As aforementioned, however, Experiment 1 of Evidence A No. 10 makes an assessment on an intermediate in Example 12 of Evidence A No. 1. It did not measure the final polyester composition to be served for the formation of film. Therefore, Experiment 1 is not a replication study of Example 12 of Evidence A No. 1. Accordingly, it cannot be recognized from Evidence A No. 10 that the film described in Example 12 of Evidence A No. 1 satisfies the constituent components (b) and (c)."

(page 11, line 19 to page 12, line 1)

In response, Demandant presents the following argument in the oral proceedings statement brief (See the oral proceedings statement brief, "5. statement brief," "1. Regarding Reasons for invalidation 1").

"(1) Demandee argues that Experiment 1 of Evidence A No. 10 is not a reproductive experiment of Example 12 of Evidence A No. 1 since it did not undergo a second process described in [0046] of Example 12 of Evidence A No. 1; i.e. a process to mix a polyethylene terephthalate comprising 30% by weight of modifier with a polyethylene terephthalate free of modifier so that the modifier may amount to 15% by weight.

However, the demandant did not implement the second process described in [0046], because paragraph [0034] of the specification discloses that the content including the same operation as this second process is optional.

Specifically, the specification discloses in [0034] that "the polyester composition of the present invention and various polyesters may be mixed to change the content of inorganic particle as necessary according to its purpose."

Accordingly, Experiment 1 of Evidence A No. 10 did not undergo the second process described in [0046] of Example 12 of Evidence A No. 1; however, Experiment 1 of Evidence A No. 10 is a sufficient replication study for the purpose of comparing with the patent invention." (page 2, lines 10 to 23)

Based on the above, when it comes to the Demandee's argument, Example 12 of Evidence A No. 1 does disclose a polyester composition where a polyester composition obtained by the paragraph [0045] has been subjected to the second process described in [0046] of Example 12; i.e., a polyester composition obtained by adjusting the content of modifier to 15% by weight by mixing with polyethylene terephthalate free of modifier and performing a film formation as in the Demandee's argument. Thus, the polyester composition subjected to the film formation is not a polyester composition obtained in paragraph [0045] of Example 12, but a polyester composition obtained in paragraph [0046].

Evidence A No. 1 discloses, however, that "the film of the present invention may be obtained from a polyester composition. The film of the present invention is not

particularly limited, but in order to obtain a biaxially stretched film with excellent whiteness, gloss, and concealment, the content of modifier consisting of calcium carbonate in a film is preferably more than 5% by weight and 40% by weight or less ... If the content of modifier is 5% by weight or less, the resultant film has poor whiteness and concealment and thus may not be preferable. If the content of modifier is more than 40% by weight, the resultant film has poor mechanical properties and thus may not be preferable." (Point 1d), Evidence A No. 1 discloses in Examples 6 and 7 that the content of modifier in a polyester composition is consistent with the content of modifier in a film, and thus it can be seen that there are specific examples where it can be recognized that a polyester composition was formed into a film without "mixing polyethylene terephthalate free of modifier."

Here, in connection with the adjustment process of the content of modifier by the addition of polyester described in the paragraph [0046], Evidence A No. 1 discloses that "In such case, the polyester composition of the present invention and various polyesters may be mixed to change the content of modifier consisting of calcium carbonate as necessary according to its purpose." (point 1c). It also discloses an example in which a white polyester film is formed without an adjustment step of the content of modifier by the addition of polyester as in Examples 6 and 7 where the content of modifier in a polyester composition and the content of modifier in a film are not changed (point 1e). Therefore, it can be said that the adjustment step of the content of modifier by the addition of polyester is not an essential step of polyester composition to serve for film formation in Evidence A No. 1, but a step to optionally adjust the content of modifier in a polyester composition so as to fall within a range suitable for the film formation.

Further, the polyester composition obtained in paragraph [0045] has a content of modifier of 30% by weight, and this content falls within the range of the content of modifier in a film so as to have a film with preferable whiteness, concealment, and mechanical properties in a film of the present invention consisting of polyester composition. Example 9 shows that a film consisting of polyester composition with the same content of modifier of 30% by weight has preferable physical properties (point 1e). Consequently, paragraph [0045] of Example 12 comprising 30% by weight of modifier also mentions about a polyester composition to be served for film with preferable physical properties. Therefore, it can be said that Evidence A No. 1 substantially discloses a white polyester film consisting of polyester composition obtained in paragraph [0045] of Example 12.

For reference, the specification of the Patent discloses that "the polyester composition of the present invention and various polyesters may be mixed to change the content of inorganic particle as necessary according to its purpose" (paragraph [0034]). Therefore, the process of adjusting the content of inorganic particles by the addition of polyester is an optional process also in patent invention 1. Consequently, it is reasonable to judge from the viewpoint of arbitrary property of the process of paragraph [0046] that a white polyester film consisting of polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1 is substantially described.

Accordingly, the demandee's argument is not acceptable, in that Experiment 1 of Evidence A No. 10 made an assessment of an intermediate in Example 12 of Evidence A No. 1, and did not measure the final polyester composition to serve for the formation of film, nor a replication study of Example 12 of Evidence A No. 1, and thus it cannot be recognized from Evidence A No. 10 that the film described in Example 12 of Evidence A No. 1 satisfies the constituent components (b) and (c).

Consequently, it is reasonable to say that Evidence A No. 1 substantially describes an embodiment of a film consisting of polyester composition obtained by paragraph [0045] of Example 12 that satisfies the requirement of "a polyester composition comprising more than 5% by weight to 80% by weight or less of a modifier for polyester-based resin consisting of calcium carbonate powder, a surface of which is treated with at least one kind of phosphoric compound selected from the group consisting of phosphoric acid, phosphorous acid, phosphine acid, phosphonic acid, and alkyl ester compounds thereof with a carbon number of 3 or less." Accordingly, the finding of the cited invention is reasonable.

6-3. Consideration of invalidation reason on the basis of cited invention

6-3-1. Regarding patent invention 1

(1) Comparison

Cited invention is compared to Patent invention 1.

The "modifier for polyester-based resin consisting of calcium carbonate powder, a surface of which is treated with at least one kind of phosphoric compound selected from the group consisting of phosphoric acid, phosphorous acid, phosphine acid, phosphonic acid, and alkyl ester compounds thereof with a carbon number of 3 or less" in the cited invention corresponds to "inorganic particle" in patent invention 1.

Further, the content of modifier for polyester-based resin in cited invention is "more than 5% by weight to 80% by weight or less" in a polyester composition, which overlaps the content of inorganic particle in a polyester composition of patent invention 1 of "5% by weight or more."

Therefore, the two inventions have a common ground in that "A white polyester film consisting of a polyester composition comprising 5% by weight or more of an inorganic particle," but are tentatively different from each other in the following points:

The different feature (1)

Regarding polyester composition, patent invention 1 specifies the concentration of a terminal carboxyl group as 35 equivalent/ 10^6 g polyester or less, whereas the cited invention fails to specify the concentration of the terminal carboxyl group.

The different feature (2)

Regarding a polyester composition, patent invention 1 specifies a difference between a crystallization temperature on heating (T_{cc}) and a glass transition temperature (T_g) as $30 \leq T_{cc} - T_g \leq 60$, whereas the cited invention fails to specify a difference between the crystallization temperature on heating (T_{cc}) and the glass transition temperature (T_g).

The different feature (3)

Regarding a white polyester film, patent invention 1 specifies it as a biaxially-stretched film, whereas the cited invention fails to specify means for film formation.

(2) Examination on Different Features

The above-mentioned different features are examined.

The different features (1) and (2)

As discussed in the above item "5-2 The invention described in Evidence A No. 1," the cited invention encompasses an embodiment of a white polyester film consisting of a polyester composition obtained in paragraph [0045] of Example 12. Based on the above, a consideration is given as to whether this polyester composition obtained in the paragraph [0045] of Example 12 might satisfy the requirements of "the concentration of

terminal carboxyl group is 35 equivalent/10⁶ g polyester or less" and "a difference between a crystallization temperature on heating (Tcc) and a glass transition temperature (Tg) satisfies the relationship of $30 \leq T_{cc} - T_g \leq 60$."

Evidence A No. 10 describes a replication study (Experiment 1) of this polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1 and reports in point 2a that the polyester composition obtained in paragraph [0045] of Example 12 has "the concentration of terminal carboxyl group of 14 to 30 equivalent/10⁶ g polyester and shows a difference between a crystallization temperature on heating (Tcc) and a glass transition temperature (Tg) of 52 to 59°C."

This certificate of experimental results was sent to Demandee to seek a comment. Then Demandee presents the following argument in the written reply in addition to the Demandee's argument described in the above item "5-2. The invention described in Evidence A No. 1." (Written reply, "(3) Description of Evidence A" in "7 Reason")

"Further, Example 12 of Evidence A No. 1 discloses in [0045] that 'the amount of elemental phosphorus was 1850 ppm,' whereas Experiment 1 of Evidence A No. 10 fails to describe the amount of elemental phosphorus, the resultant composition was not studied, nor even a film was formed. Therefore, it is indefinite as to whether or not the example was correctly replicated." (page 10, lines 20 to 23)

Based on the above, the above Demandee's argument is considered. Indeed, as in the demandee's argument, Evidence A No. 10 fails to describe the measurement result of the amount of elemental phosphorus, but there is no doubt from point 2a that Experiment 1 of Evidence A No. 10 is a reproductive experiment of the polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1. Therefore, it is obvious that the polyester composition produced by the same method shows the same amount of elemental phosphorus. Further, with respect to the point that Experiment 1 of Evidence A No. 10 did not form a film, as is discussed in the above item "5-2. The invention described in Evidence A No. 1," it is obvious that the polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1 that has been replicated in Experiment 1 may be formed into a white polyester film.

Accordingly, the Demandee's argument is not acceptable in its statement that "Experiment 1 of Evidence A No. 10 fails to describe the amount of elemental

phosphorus of the polyester composition, the resultant composition was not studied, nor even a film was formed. Therefore, it is indefinite as to whether or not the example was correctly replicated."

Furthermore, the Demandee presents the following argument in the written statement dated August 6, 2013, while showing Evidence B No. 5 and Evidence B No. 6.

"Furthermore, as is described in Evidence B No. 5, Demandee conducted replication studies on the polyester compositions described in the paragraph [0045] of Evidence A No. 1 having an intrinsic viscosity of about 0.55 dl/g (Experiment 2-1) and an intrinsic viscosity of about 0.50 dl/g (Experiment 2-2). The result showed the concentration of terminal carboxyl group of 62 and 49 equivalent/10⁶g respectively, which has shown that the constituent component (b) is not satisfied. In addition, regarding the specific surface area of calcium carbonate particle, the description of Example 12 of Evidence A No. 1 is 8.0 m²/g, whereas Evidence B No. 5 uses one with a specific surface area of 10.2 m²/g. The specific surface area does not affect the concentration of terminal carboxyl group. This is obvious from the certificate of experimental results submitted as Evidence B No. 9, showing that the change in the total specific surface area of calcium carbonate particle in a polyester composition by the change in the additive amount of the particle did not change the concentration of terminal carboxyl group. In addition, regarding the specific surface area, Evidence A No. 1 describes in [0018] 3 to 60 m²/g as a particularly preferable range, and its examples range from 4.5 to 13.0 m²/g, and thus the value of 10.2 m²/g falls within these ranges. Therefore, there is no difference in the substantial meaning of the invention of Evidence A No. 1 between the invention using calcium carbonate with a specific surface area of 8.0 m²/g and the invention using calcium carbonate with a specific surface area of 10.2 m²/g. This does not influences recognition t that the results of Experiments 2-1 and 2-2 of Evidence B No. 5 are results of supplementary experiment of the polyester composition described in [0045] of Evidence A No. 1." (page 4, line 21 to page 5, line 3)

Based on the above, a consideration is given to demandee's argument. The specific surface area of calcium carbonate particle used in the production of polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1 is 8.0 m²/g, whereas the experiment in Evidence B No. 5 used the one with a specific surface

area of $10.2 \text{ m}^2/\text{g}$. It is thus obvious that the raw material used is not the same. Demandee argues about the difference of raw materials on the basis of the experiment described in Evidence B No. 9 that the change in the total specific surface area of calcium carbonate particle in a polyester composition by the change in the additive amount of the particle would not change the concentration of terminal carboxyl group, and thus the difference in the specific surface area of calcium carbonate would not affect the substantial meaning of the inventions. Evidence B No. 9 discloses experimental results, however, showing that the concentration of terminal carboxyl group was 51 equivalent/ 10^6 in Experiment 4-1, whereas it was 52 and 47 equivalent/ 10^6 respectively Experiments 4-2 and 4-3. Thus it cannot be said that the concentration of terminal carboxyl group does not change. Further, if the content of calcium carbonate in a polyester composition differs, the mixing state in a polyester composition is obviously different. Therefore, it is reasonable to construe that it is impossible to conclude from the comparative experiments described in Evidence B No. 9 where the total specific surface areas were numerically equivalent that the difference in specific surface area may not affect the invention (in particular the concentration of terminal carboxyl group). Furthermore, it cannot be said that there was common technical knowledge as of the filing that the effect of the difference in specific surface area on the invention might be evaluated by the total specific surface area.

Accordingly, it cannot be said that the experiment described in Evidence B No. 5 is a supplementary experiment of the polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1. Thus, the demandant's argument above is not reasonable.

Further, when it comes to the certificate of experimental results of Evidence A No. 10, there is no doubt in the experimental results that the concentration of terminal carboxyl group is 14 to 30 equivalent/ 10^6 g polyester, and the difference between crystallization temperature on heating (T_{cc}) and glass transition temperature (T_g) is 52 to 59°C. Therefore, it is reasonable to find that the concentration of terminal carboxyl group is 14 to 30 equivalent/ 10^6 g polyester, and a difference between crystallization temperature on heating (T_{cc}) and glass transition temperature (T_g) is 52 to 59°C in accordance with the demandant's argument.

Consequently, it can be said that a white polyester film made of the polyester composition obtained in the paragraph [0045] of Example 12 has a concentration of terminal carboxyl group of polyester composition constituting the white polyester film

of 14 to 30 equivalent/10⁶ g polyester and shows a difference between a crystallization temperature on heating (Tcc) and a glass transition temperature (Tg) of 52 to 59°C. Accordingly, the white polyester film of the cited invention has a concentration of terminal carboxyl group of polyester composition constituting the white polyester film and a difference between a crystallization temperature on heating (Tcc) and a glass transition temperature (Tg) that respectively overlap "a concentration of terminal carboxyl group of 35 equivalent/10⁶ g polyester or less" and "a difference between a crystallization temperature on heating (Tcc) and a glass transition temperature (Tg) satisfying the relationship of $30 \leq T_{cc} - T_g \leq 60$ " of the polyester composition in patent invention 1. In conclusion, the different features (1) and (2) are not substantial differences.

Regarding the different feature (3)

It can be seen from point 1c that Evidence A No. 1 discloses biaxial stretching as a specific method of producing a film consisting of polyester composition. Consequently, it can be said that the white polyester film of the cited invention encompasses biaxially-stretched white polyester film produced by biaxial stretching.

In this regard, the Demandee presents the following argument in the written statement dated August 6, 2013, while showing Evidence B No. 5 and Evidence B No. 9, in addition to the argument about the different features (1) and (2) above:

"Regarding the polyester composition that was allegedly obtained according to the description of the paragraph [0045] of Example 12 of Evidence A No. 1 as described in Evidence A No. 10, however, it is strongly suggested that the polyester composition may not be formed into a biaxially-stretched film, and the actual experimental study by Demandee showed that the polyester composition could not be subjected to biaxial stretching in a condition described in Evidence A No. 1. Hereinafter, the detailed explanation follows.

The intrinsic viscosity of the polyester composition obtained in Experiment 1 of Evidence A No. 10 was 0.55 dl/g for Experiment 1-1, and 0.50 dl/g for Experiment 1-2 and 1-3. It is an obvious fact that the intrinsic viscosity may greatly contribute to the film-forming property in a biaxially-stretched polyester film, in particular, a biaxially-stretched polyester film highly filled with inorganic particle (this fact is evident from Evidence B No. 6 as mentioned below). In examples described in Evidence A No. 1,

Examples 1 to 11 used a polyethylene terephthalate (PET) with an intrinsic viscosity of 0.65 dl/g as described in paragraphs [0039] to [0040]. Example 12 fails to describe the intrinsic viscosity of the composition described in [0045], but discloses in [0046] that a film was formed by mixing with PET having an intrinsic viscosity of 0.65. Specifically, as aforementioned, Examples 1 to 11 form a film with PET having an intrinsic viscosity of 0.65 dl/g, whereas the polyester composition obtained in Experiment 1 of Evidence A No. 10 has an intrinsic viscosity of at most 0.55 dl/g (The content of calcium carbonate is 30% by weight, which is drastically higher than in Example 6 or 7).

In this regard, in the certificate of experimental results submitted as Evidence B No. 5 as attached hereto, Demandee conducted a supplementary experiment (Experiment 2-1) where the intrinsic viscosity was adjusted to about 0.55 dl/g in the composition described in [0045] of Evidence A No. 1 to try to form a film in the stretching condition described in Evidence A No. 1. As a result, it was found that the composition could not be subjected to biaxial stretching (Evidence B No. 5, Experiment 2-3). Specifically, the composition described in Experiment 1-1 of Evidence A No. 10 is equivalent to the composition described in Experiment 2-1 of Evidence B No. 5. The composition has been found to be formed into a biaxially-stretched film from the description of Evidence A No. 1. Furthermore, Evidence B No. 6 (Japanese Unexamined Patent Application Publication No. 2010-254779) as attached hereto discloses in [0032] that "PET-A and PET-B were mixed so that the content of titanium dioxide particle in a mixture might become 7% by weight ... to form an unstretched film, and this was stretched by 3.0 times in a longitudinal direction (machine direction) at 100°C, ... and stretched by 3.7 times in (traverse direction) ... to obtain a white polyester film," and discloses in Table 1 the intrinsic viscosity of polymer, the additive amount of titanium dioxide particle, and the stretching ability for each example. Example 3 discloses that the intrinsic viscosity of polymer was 0.55 dl/g, and the additive amount of titanium dioxide was 10% by weight, and the stretching ability was ○. Comparative Example 1 similarly discloses that the intrinsic viscosity of polymer was 0.48 dl/g, the additive amount of titanium dioxide was 10% by weight, and the stretching ability was ×. Comparative Example 6 similarly discloses that the intrinsic viscosity of polymer was 0.55 dl/g, the additive amount of titanium dioxide was 20% by weight, and the stretching ability was ×. Evidence B No. 6 added inorganic particles to PET as in the case of [0045] of Evidence A No. 1, which was followed by biaxial stretching. It can be seen from the above description that lower intrinsic viscosity may result in poorer stretching ability if the additive amount of particle increases, and given the intrinsic viscosity of 0.55, the

additive amount of 10% by weight (Example 3) resulted in the stretching ability for one hour or more (○), whereas the additive amount of 20% by weight (Comparative Example 6) resulted in breakage (×) in less than 10 minutes. Here, regarding the stretching condition, the stretching condition of Evidence A No. 1 is equivalent to the stretching condition of Evidence B No. 6, since paragraphs [0040] and [0046] of Evidence A No. 1 disclose that unstretched film was heated to 95°C and stretched in a machine direction by 3.3 times, and further heated to 100°C and stretched in a traverse direction by 3.3 times. Since the polyester composition described in Experiment 1 of Evidence A No. 10, which is allegedly a replication study of [0045] of the specification of Evidence A No. 1, has an intrinsic viscosity of at most 0.55 dl/g and the content of inorganic particle of 30% by weight, far beyond 20% by weight, it is strongly suggested from the description of Evidence B No. 6 that a biaxially-stretched film may not be made in a stretching condition of Evidence A No. 1. In addition, Evidence B No. 6 is a document published after the patent application. This does not affect the described fact and the inference of the stretching ability of polyester composition described in Evidence A No. 10.

Therefore, regarding the finding in the preliminary notice of trial decision on page 19, lines 8 to 12: "regarding the fact that a film was not formed in Experiment 1 of Evidence A No. 10, as is discussed in the above item '5-2, the invention described in Evidence A No. 1,' it is obvious that the polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1 that has been replicated in Experiment 1 may be formed into a white polyester film, obviously it would not apply to biaxially-stretched white polyester film." (page 2, line 23 to page 4, line 9)

Based on the above, a consideration is given to the demandee's argument, as is discussed in the above item "The different features (1) and (2)," first of all, it cannot be said that the experiment described in Evidence B No. 5 is a supplementary experiment of the polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1. Thus, the demandant's argument above is not reasonable.

Further, a consideration is given to the Demandee's argument that, regarding the intrinsic viscosity of polyester composition and the content of inorganic particle and the stretching formability, it is strongly suggested that the polyester composition might not be formed into a biaxially-stretched film in a stretching condition of Evidence A No. 1 from the description of Evidence B No. 6 if its intrinsic viscosity is 0.55 dl/g and the content of inorganic particle is 30% by weight. Indeed, as Demandee argues, Evidence

A No. 1 discloses the stretching condition of biaxial stretching that "the draw ratio is not particularly limited, but usually 2.0 to 5.0 times is appropriate for MD and TD, respectively" (point 1c), and in the examples, "unstretched film was heated to 95°C and stretched by 3.3 times in a machine direction and further heated to 100°C by 3.3 times in a traverse direction, and heated to 200°C" (points 1e and 1f), but the polyester composition to serve for polyester film of Evidence B No. 6 is first of all a different polyester composition with an inorganic particle different from the polyester composition of Evidence A No. 1. There is no evidence to show the feasibility of directly comparing the formability of biaxially-stretched films on the basis of the intrinsic viscosity of different compositions and the different contents of inorganic particles. It can thus be said that it is infeasible to directly compare the formability of biaxially-stretched film of these compositions.

Further, Evidence B No. 6 observed the film formability in "stretching in a longitudinal direction by 3.0 times and in a traverse direction by 3.7 times to form a film" with regard to the stretching ability of film of examples (paragraph [0028]) and evaluated the stretching ability in stretching at a specific ratio. In addition, the examples are silent about the stretching temperature condition of films; however, when referring to the description of the paragraph [0021], it is highly likely that it is the specific temperature ranges of 70 to 120°C for the stretching in a longitudinal direction and 90 to 150°C for the stretching in a traverse direction.

In contrast, regarding the biaxial stretching condition of polyester film of Evidence A No. 1, point 1c mentions that the draw ratio is not particularly limited. Therefore, only on the basis of the description of the draw ratio of "3.3 times" for both MD and TD in the examples and the description that "usually 2.0 to 5.0 times is appropriate for MD and TD respectively," it is not reasonable to construe that the draw ratio condition of biaxial stretching of polyester film described in Evidence A No. 1 should be limited to these ranges. There is no other explicit disclosure allowing us to construe in a limited manner. Further, regarding the stretching temperature, Evidence A No. 1 has no general description but only describes one example of stretching temperature condition in the examples. It is thus unreasonable to construe the stretching temperature condition as the condition described in the examples in a limited way. Further, in view of the common technical knowledge as of the filing, a person skilled in the art could have made a biaxially-stretched film in a necessary stretching temperature condition and at a draw ratio that would not cause film breakage according to the composition of the polyester composition.

Consequently, on the basis of a different polyester composition comprising different inorganic particles in Evidence B No. 6 and the evaluation of stretching ability of a film at a specific stretching ratio and stretching temperature condition, it is not reasonable to construe that a biaxially-stretched film may not be made from the polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1.

For reference, it cannot be said that Experiment 2-3 of Evidence B No. 4 is a supplementary experiment of polyester composition obtained in the paragraph [0045] of Example 12 of Evidence A No. 1. First of all, the demandee's allegation on the basis of the experiment is not acceptable. Even if the polyester composition were replicated, as is discussed above, there is no reason to limit the biaxial stretching condition to "an unstretched film was heated to 95°C and stretched by 3.3 times in a machine direction and further heated to 100°C by 3.3 times in a traverse direction, and heated to 200°C." It is not reasonable to construe on the basis of the result of Experiment 2-3 that a biaxially-stretched film may not be made from the polyester composition obtained in the paragraph [0045] of Example 12 of Evidence A No. 1.

Therefore, the Demandant's argument is not acceptable.

Accordingly, the different feature (3) is not a substantial difference and the patent invention 1 is identical to the invention described in Evidence A No. 1.

6-3-2. Patent invention 2

Patent invention 2 is as described in the above item "No. 3 The patent invention." It further comprises the matter of "the inorganic particle is at least one kind of particle selected from the group consisting of metal carbonate, silicate compounds, barium sulfate, and zinc sulfide" in patent invention 1.

Comparing the cited invention to patent invention 2, it is recognized that "calcium carbonate" of the cited invention corresponds to "metal carbonate salt" of patent invention 2.

Accordingly, patent invention 2 is identical to the invention described in Evidence A No. 1.

6-3-3. Patent invention 3

Patent invention 3 is as described in the above item "No. 3 The patent invention." It further comprises the matter of "polyester is a copolymeric polyester" in patent invention 1.

Comparing the cited invention to patent invention 3, Evidence A No. 1 discloses that the polyester of the cited invention "may be homopolyester or copolyester" (point 1b), and it is thus recognized that the cited invention encompasses the embodiment corresponding to "copolymeric polyester" in patent invention 3.

Accordingly, patent invention 3 is identical to the invention described in Evidence A No. 1.

6-3-4. Patent invention 4

Patent invention 4 is as described in the above item "No. 3 The patent invention." It further comprises the matter of "the copolymeric polyester is obtained by polymerizing at least one kind of components selected from the group consisting of aromatic dicarboxylic acid, aliphatic dicarboxylic acid, cycloaliphatic dicarboxylic acid, aliphatic diols, and cycloaliphatic diols" in patent invention 3.

Comparing the cited invention to patent invention 4, it can be seen from the point 1b that Evidence A No. 1 exemplifies dicarboxylic acids such as isophthalic acid and diols such as diethylene glycol as a copolymeric component of the cited invention. Therefore, the cited invention obviously encompasses the embodiment corresponding to the embodiment of "the copolymeric polyester obtained by polymerizing at least one kind of components selected from the group consisting of aromatic dicarboxylic acid, aliphatic dicarboxylic acid, cycloaliphatic dicarboxylic acid, aliphatic diols, and cycloaliphatic diols" in patent invention 4.

Accordingly, patent invention 4 is identical to the invention described in Evidence A No. 1.

6-3-5. Patent invention 5

Patent invention 5 is as described in the above item "No. 3 The patent invention." It further comprises the matter of "a melting point of polyester is 240°C or more" in patent invention 1.

Comparing the cited invention to patent invention 5, they tentatively differ from each other in that the cited invention does not particularly specify the melting point of polyester.

However, as is discussed in the above item 6-3-1. (2) Examination on different features, Experiment 1 of Evidence A No. 10 is an experiment in which the polyester composition obtained in paragraph [0045] of Example 12 of Evidence A No. 1 has been replicated. This replication study establishes that the polyester composition has a

melting point of 248 to 253°C. Accordingly, this different feature is not a substantial difference.

Therefore, patent invention 5 is identical to the invention described in Evidence A No. 1.

6-3-6. Patent invention 6

Patent invention 6 is as described in the above item "No. 3 The patent invention." It further comprises the matter of "the polyester composition contains 50 ppm or more of an elemental phosphorus" in patent invention 1.

Comparing the cited invention to patent invention 6, Evidence A No. 1 discloses in the claims that the modifier for polyester-based resin of the cited invention "contains 100 to 30000 ppm of elemental phosphorus" (point 1a). Regarding the polyester composition obtained in paragraph [0045] of Example 12, it is described as having "an amount of elemental phosphorus of 1850 ppm in the polyester composition," which overlaps the amount of elemental phosphorus in patent invention 6.

Therefore, patent invention 6 is identical to the invention described in Evidence A No. 1.

No. 7 Closing

As described above, without examining the invalidation reason 1-2 and invalidation reasons 2 to 5, since patent inventions 1 to 6 correspond to the inventions provided in Article 29(1)(iii) of the Patent Act, the Patents according to patent inventions 1 to 6 correspond to Article 123(1)(ii) and thus should be invalidated.

The costs in connection with the trial shall be borne by Demandee under the provisions of Article 61 of the Code of Civil Procedure as applied mutatis mutandis to the provision of Article 169(2) of the Patent Act.

Therefore, the trial decision shall be made as described in the conclusion.

October 3, 2013

Chief administrative judge: TAGUCHI, Masahiro

Administrative judge: SHIOMI, Atsushi

Administrative judge: KURANO, Masaaki