

Patent Right	Date	February 8, 2021	Court	Intellectual Property High Court, Third Division
	Case number	2020 (Gyo-Ke) 10001		
<p>- A case in which, concerning the opposition to a granted patent for the invention titled "(meth)acrylic acid ester copolymer," the court rescinded the JPO's patent revocation decision on the grounds that there was an error in the JPO's determination in that decision to revoke the patent due to lack of an inventive step.</p>				

Case type: Rescission of Patent Revocation Decision

Results: Granted

References: Article 29, paragraph (2) of the Patent Act

Related rights, etc.: Opposition No. 2019-700313, Patent No. 6419863

Summary of the Judgment

1. In this case, concerning the invention (hereinafter referred to as the "Invention") related to Claim 1 of the patent of the Appellant titled "(meth)acrylic acid ester copolymer" (hereinafter referred to as the "Patent"), an opposition against a granted patent was filed and the JPO made a decision (hereinafter referred to as the "JPO Decision") to revoke the patent related to the Invention due to the lack of an inventive step, and therefore the Appellant claimed rescission of the decision.

The summary of the JPO Decision is that the Invention could have been easily conceived of by a person skilled in the art based on the inventions indicated in Exhibits Ko 7 to 9 Documents (hereinafter referred to as "Cited Invention 1" through "Cited Invention 3")

2. In this judgment, the court held as outlined below and rescinded the JPO Decision on the grounds that there was an error in the JPO's determination in the JPO Decision.

(1) Existence of an inventive step in the Invention against Cited Invention 1

A. Difference 1 between the Invention and Cited Invention 1 is that the copolymer of Cited Invention 1 is different from that of the Invention and does not contain component 'd' (meaning "(meth)acrylic acid ester containing hydroxy groups" that is a component monomer of the Invention) as a component monomer.

In addition, for the Invention and Cited Invention 1, the technical field and the problem to be solved by the invention are not necessarily the same and therefore there was little motivation to add improvement to Cited Invention 1 to solve the problem of the Invention in the first place. According to the details indicated in Exhibit Ko 7 Document, there is little reason for a person skilled in the art to select two kinds of

monomers, a monomer containing epoxy groups and a monomer containing hydroxy groups, from among multiple combinations. Therefore, it cannot be said that a person skilled in the art who came across Exhibit Ko 7 Document had motivation to conceive of the composition of Invention 1 related to Difference 1.

Consequently, in Cited Invention 1, it cannot be said that a person skilled in the art could have easily conceived of the idea of containing component 'd' as a component monomer at the time of the filing of the application.

B. Concerning Difference 2 between the Invention and Cited Invention 1, the values of the composition amount 'b' of component 'b' (meaning "polymerizable compound containing carboxyl groups and carbon-carbon double bonds" that is a component monomer of the Invention) and the composition amount 'c' of component 'c' (meaning "polymerizable compound containing glycidyl groups and carbon-carbon double bonds" that is a component monomer of the Invention) when deeming the total amount of the monomers that constitute (meth)acrylic acid ester copolymer as 100% by mass are " $10 \leq b+40c \leq 26$ ($0.05 \leq c \leq 0.45$)" in the Invention, while 'c' is 0.5 and 'b+40c' is 26.8 in the copolymer in Cited Invention 1.

For the Invention and Cited Invention 1, the technical field and the problem to be solved by the invention are not necessarily the same; monomers are not equivalent in terms of adhesion and cohesion; it is not natural or easy for a person skilled in the art to replace monomers or to maintain the composition amounts; and no technical reasons are found that a person skilled in the art would reduce the composition amount of glycidyl methacrylate to less than the lower limit of the composition amount of the third component in Cited Invention 1. According to these facts, it cannot be said that a person skilled in the art who came across Exhibit Ko 7 Document had motivation to conceive of the composition of Invention 1 related to Difference 2.

Consequently, it cannot be said that a person skilled in the art could have easily conceived of changing the values of composition amount 'b' of compound 'b' and composition amount 'c' of compound 'c' in Cited Invention 1 to adjust them within the range of values in the Invention at the time of the filing of the application.

(2) Existence of an inventive step in the Invention against Cited Invention 2

Concerning Difference 4 between the Invention and Cited Invention 2, the values of the composition amount 'b' of component 'b' and the composition amount 'c' of component 'c' when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer as 100% by mass are " $10 \leq b+40c \leq 26$ ($0.05 \leq c \leq 0.45$)" in the Invention, while 'c' is 4.8 and 'b+40c' is 196.8 in the copolymer in Cited Invention 1.

In addition, for the Invention and Cited Invention 2, the technical field and the problem to be solved by the invention are not necessarily the same and therefore there was little motivation to add improvement to Cited Invention 2 to solve the problem of the Invention in the first place. No technical reasons are found for a person skilled in the art to focus on acrylic acid glycidyl ester out of five kinds of monomers and to adjust the composition amount to be 1/10 or lower. Based on these facts, it cannot be said that a person skilled in the art who came across Exhibit Ko 8 Document had motivation to conceive of the composition of the Invention related to Difference 4.

Consequently, it cannot be said that a person skilled in the art could have easily conceived of changing the values of composition amount 'b' of compound 'b' and composition amount 'c' of compound 'c' in Cited Invention 2 to adjust them within the range of values in the Invention at the time of the filing of the application.

(3) Existence of an inventive step in the Invention against Cited Invention 3

Concerning Difference 6 between the Invention and Cited Invention 3, the values of the composition amount 'b' of component 'b' and the composition amount 'c' of component 'c' when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer as 100% by mass are " $10 \leq b + 40c \leq 26$ ($0.05 \leq c \leq 0.45$)" in the Invention, while 'c' is 20 and 'b+40c' is 810 in the copolymer in Cited Invention 3.

In addition, for the Invention and Cited Invention 3, the technical field and the problem to be solved by the invention are not necessarily the same and therefore there was little motivation to add improvement to Cited Invention 3 to solve the problem of the Invention in the first place. No technical reasons are found for a person skilled in the art to focus on glycidyl methacrylate and to adjust the composition amount to be 1/10 or lower than the lower limit of the preferable range. Based on these facts, it cannot be said that a person skilled in the art who came across Exhibit Ko 9 Document had motivation to conceive of the composition of the Invention related to Difference 6.

Consequently, it cannot be said that a person skilled in the art could have easily conceived of changing the values of composition amount 'b' of the compound 'b' and composition amount 'c' of the compound 'c' in Cited Invention 3 to adjust them within the range of values in the Invention.

Judgment rendered on February 8, 2021

2020 (Gyo-Ke) 10001, Case of seeking rescission of patent revocation decision

Date of conclusion of oral argument: December 1, 2020

Judgment

Plaintiff: Riken Technos Corporation

Defendant: Commissioner of the Japan Patent Office

Main text

1. The decision made by the Japan Patent Office (JPO) on November 28, 2019, concerning Opposition No. 2019-700313 shall be rescinded.
2. The Defendant shall bear the court costs.

Facts and reasons

No. 1 Claim

Same as the main text.

No. 2 Outline of the case

1. Outline of procedures at the JPO

(1) The Plaintiff filed a patent application (Patent Application No. 2017-2700; hereinafter referred to as the "Application") on January 11, 2017, concerning an invention titled "(meth)acrylic acid ester copolymer" and the establishment of the patent right was registered (Patent No. 6419863; number of claims: 2; hereinafter referred to as the "Patent") on October 19, 2018.

Concerning the Application, a new patent application was filed on September 25, 2015, for part of the patent application (Patent Application No. 2012-42174) filed by the Plaintiff on February 28, 2012 (Patent Application No. 2015-187678), and another new patent application was filed for another part of the application (Exhibit Ko 1).

(2) An opposition was filed on April 19, 2019, concerning Claim 1 of the Patent (Opposition No. 2019-700313) (Exhibit Ko 2).

(3) The JPO made the decision that "the patent related to Claim 1 of Patent No. 6419863 shall be revoked" (hereinafter referred to as the "Decision") on November 28, 2019. The certified copy of the written decision was served upon the Plaintiff on December 10, 2019.

(4) The Plaintiff filed this lawsuit to seek rescission of the Decision on January 8, 2020.

2. Statement of the claims

The statement of the claims related to the Patent is as indicated below (hereinafter the invention in Claim 1 is referred to as the "Invention" and the description of the Patent as the "Description"). (Exhibit Ko 1)

[Claim 1]

A (meth)acrylic acid ester copolymer containing:

(A-a) (meth)acrylic acid ester,

(A-b) polymerizable compound containing carboxyl groups and carbon-carbon double bonds,

(A-c) polymerizable compound containing glycidyl groups and carbon-carbon double bonds, and

(A-d) (meth)acrylic acid ester containing hydroxy groups

as constituent monomers, wherein:

when deeming the total amount of monomers that constitute a (meth)acrylic acid ester copolymer (A) as 100% by mass, composition amount 'b' (% by mass) of (A-b) above and composition amount 'c' (% by mass) of (A-c) above fulfill the formula: $10 \leq b + 40c \leq 26$ ($4 \leq b \leq 14$, $0.05 \leq c \leq 0.45$);

and the (meth)acrylic acid ester copolymer that is characterized by being used as the adhesive composition for an adhesive layer of a decorative sheet.

(Hereinafter each constituent monomer of (A-a) through (A-d) above is referred to as in the order of "Component a" through "Component d" in some cases.)

[Claim 2]

The (meth)acrylic acid ester copolymer according to Claim 1, wherein:

said adhesive composition contains

(A) 100 parts by mass of said (meth)acrylic acid ester copolymer,

(B) 0.10 to 0.40 parts by mass of isocyanate compound by converting it to the amount of isocyanate groups, and

(C) 10 to 50 parts by mass of flame retardant to 100 parts by mass of said (meth)acrylic acid ester copolymer (A).

(Hereinafter each component of (A) through (C) above is referred to as in the order of "Component (A)" through "Component (C)" in some cases.)

3. Summary of the reasons for the Decision

(1) The reasons for the Decision are as stated in Attachment "Decision on Opposition" (copy). In short, since the Invention could have been easily made by a person skilled in the art based on the inventions indicated in the following documents (hereinafter the documents are referred to as in the order of "Exhibit Ko 7 Document" through "Exhibit Ko 9 Document" and the inventions are referred to as in the order of "Cited Invention 1"

through "Cited Invention 3"), the patent shall not be granted pursuant to the provisions of Article 29, paragraph (2) of the Patent Act.

Cited Document 1: Examined Patent Application Publication No. 1983-21940 (Exhibit Ko 7)

Cited Document 2: Unexamined Patent Application Publication No. 1996-88206 (Exhibit Ko 8)

Cited Document 3: Unexamined Patent Application Publication No. 2005-327789 (Exhibit Ko 9)

(2) Cited Invention 1 through Cited Invention 3 recognized by the Decision and common features and differences between the Invention and Cited Invention 1 through Cited Invention 3 are as stated below (Differences 3, 5, and 7 are found to be "prima facie differences").

A. Cited Invention 1

(A) Cited Invention 1

(Meth)acrylic acid ester copolymer polymerizing 399 parts by weight of 2-ethylhexyl acrylate, 105 parts by weight of n-butyl acrylate, 140 parts by weight of ethyl acrylate, 47.5 parts by weight of acrylic acid, and 3.5 parts by weight of glycidyl methacrylate.

(B) Common features and differences between the Invention and Cited Invention 1

(Common features)

"A (meth)acrylic acid ester copolymer containing:

(A-a) (meth)acrylic acid ester,

(A-b) polymerizable compound containing carboxyl groups and carbon-carbon double bonds,

(A- c) polymerizable compound containing glycidyl groups and carbon-carbon double bonds,

as constituent monomers, wherein;

when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer (A) as 100% by mass, composition amount 'b' (% by mass) of (A-b) above fulfills $4 \leq b \leq 14$."

(Difference 1)

In the Invention, copolymer includes "(A-d) (meth)acrylic acid ester containing hydroxy groups" as the constituent monomers, while in Cited Invention 1, the copolymer does not contain said monomers.

(Difference 2)

In the Invention, "when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer (A) as 100% by mass, composition amount 'b' (% by

mass) of (A-b) above and composition amount 'c' (% by mass) of (A-c) above fulfill the formula: $10 \leq b+40c \leq 26$ ($0.05 \leq c \leq 0.45$)," while in Cited Invention 1, composition amount 'c' of the copolymer is $0.5(3.5/(399+105+140+47.5+3.5) \times 100)$ and 'b+40c' is 26.8.

(Difference 3)

The copolymer in the Invention is "used as the adhesive composition for an adhesive layer of a decorative sheet," while the copolymer in Cited Invention 1 is not indicated to be used for said purpose.

B. Cited Invention 2

(A) Cited Invention 2

(Meth)acrylic acid ester copolymer polymerizing 80 parts by weight of n-butyl acrylate, 10 parts by weight of acrylonitrile, 5 parts by weight of acrylic acid, 5 parts by weight of 2-hydroxyethyl acrylate, and 5 parts by weight of acrylic acid glycidyl ester.

(B) Common features and differences between the Invention and Cited Invention 2

(Common features)

"A (meth)acrylic acid ester copolymer containing:

(A-a) (meth)acrylic acid ester,

(A-b) polymerizable compound containing carboxyl groups and carbon-carbon double bonds,

(A- c) polymerizable compound containing glycidyl groups and carbon-carbon double bonds, and

(A-d) (meth)acrylic acid ester containing hydroxy groups

as constituent monomers, wherein;

when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer (A) as 100% by mass, composition amount 'b' (% by mass) of (A-b) above fulfills $4 \leq b \leq 14$."

(Difference 4)

In the Invention, "when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer (A) to be 100% by mass, composition amount 'b' (% by mass) of (A-b) above and composition amount 'c' (% by mass) of (A-c) above fulfill the formula: $10 \leq b+40c \leq 26$ ($0.05 \leq c \leq 0.45$)," while in Cited Invention 2, composition amount 'c' of the copolymer is $4.8(5/(80+10+5+5+5) \times 100)$ and 'b+40c' is 196.8.

(Difference 5)

The copolymer in the Invention is "used as the adhesive composition for an adhesive layer of a decorative sheet," while the copolymer in Cited Invention 2 is not indicated to be used for said purpose.

C. Cited Invention 3

(A) Cited Invention 3

(Meth)acrylic acid ester copolymer copolymerizing 55 parts by mass of acrylic acid butyl ester, 10 parts by mass of methacrylic acid, 20 parts by mass of methacrylic acid glycidyl ester, and 15 parts by mass of 2-hydroxyethyl acrylate.

(B) Common features and differences between the Invention and Cited Invention 3

(Common features)

"A (meth)acrylic acid ester copolymer containing:

(A-a) (meth)acrylic acid ester,

(A-b) polymerizable compound containing carboxyl groups and carbon-carbon double bonds,

(A- c) polymerizable compound containing glycidyl groups and carbon-carbon double bonds, and

(A-d) (meth)acrylic acid ester containing hydroxy groups

as constituent monomers, wherein;

when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer (A) as 100% by mass, composition amount 'b' (% by mass) of (A-b) above fulfills $4 \leq b \leq 14$."

(Difference 6)

In the Invention, "when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer (A) as 100% by mass, composition amount 'b' (% by mass) of (A-b) above and composition amount 'c' (% by mass) of (A-c) above fulfill the formula: $10 \leq b + 40c \leq 26$ ($0.05 \leq c \leq 0.45$)," while in Cited Invention 3, composition amount 'c' of the copolymer is $20 / (20 / (55 + 10 + 20 + 15) \times 100)$ and 'b+40c' is 810.

(Difference 7)

Copolymer in the Invention is "used as the adhesive composition for an adhesive layer of a decorative sheet," while the copolymer in Cited Invention 3 is not indicated to be used for said purpose.

(3) The Decision determined as outlined below concerning whether the Invention has an inventive step.

A. Differences 1, 2, 4, and 6

According to the statements in Exhibit Ko 7 Document through Exhibit Ko 9 Document, a person skilled in the art could have easily selected the same kind of monomer as the Invention and set the composition amount, etc. as necessary within the same level of ranges as the Invention in each cited invention.

B. Differences 3, 5, and 7

The limitation of use "as the adhesive composition for an adhesive layer of a

decorative sheet" in the Invention only indicates the usability of the compound and it is not found to cause differences in terms of chemical structure from that in each cited invention. Therefore, Differences 3, 5, and 7 are not substantive differences.

C. Effects of the Invention

The effects of copolymers in the Invention that can be read based on the statement of the Description are nothing more than "having adhesion" (the effects that are shown only when it becomes a specific composition are not the effects of the copolymers), and no more exceptional effects can be found compared with Cited Invention 1 through Cited Invention 3.

4. Grounds for rescission

The grounds for rescission alleged by the Plaintiff are errors in the determination concerning the inventive step of the Invention against Cited Invention 1 through Cited Invention 3.

(omitted)

No. 5 Judgment of this court

1. Invention

(1) Claims

The claims for the Invention are as stated in No. 2, 2. above.

(2) Statement in the Description

The Description states as follows (Exhibit Ko 1; Table 1-1, Table 1-2, and Table 2 are as indicated in the Attachment; the parts indicated by "..." refer to the parts omitted.).

A. Technical field

[0001] This invention is related to an adhesive composition. In further detail, it is related to an adhesive composition that is excellent for its tackiness, workability, heat-resistance, and adhesion and that is suitable for an adhesive layer of a decorative sheet which satisfies incombustibility as provided for by the Building Standards Act.

B. Background art

[0002] When constructing a building, it is required to establish a fire control area as specified by the Building Standards Act and to use fire-safe materials and other appropriate materials based on the size and intended use of the building. In particular, interior materials have a large impact on human lives when a fire occurs. Therefore, the use of fire-safe materials is required by interior restrictions. The fire-safe materials are categorized into "incombustible materials," "quasi-incombustible materials," and "flame-retardant materials," etc. and those that pass the testing specified by the public notice of

the Ministry of Land, Infrastructure, Transport and Tourism are used after examination and certification.

[0003] At the same time, as conventional construction components, such as wall materials and floor materials, etc., base materials that consist of iron, aluminum, and other metallic materials, calcium sulfate and other mineral materials, or wood, plywood, bonded wood, particleboard, hardboard, and other wood-based materials and whose surfaces are decorated by bonding a decorative sheet are used. The construction components decorated by a decorative sheet are also required to obtain the aforementioned certification of incombustibility. Therefore, it is very important to obtain the aforementioned certification of incombustibility for a decorative sheet and various proposals had been made for this reason

[0006] However, there is a problem that these ... decorative sheets ... do not fully satisfy the specifications for certification of incombustibility and they sometimes failed to pass an examination for the certification. In addition, when bonding a decorative sheet to an adherent, if tackiness is poor, the sheet may fall down at the time of provisional bonding, and if tackiness is too strong, it becomes difficult to remove the sheet when adjusting the bonding position after provisional bonding. Therefore, appropriate tackiness is required for good workability of a decorative sheet; however, the aforementioned decorative sheets do not satisfy both tackiness and workability.

[0007] A decorative sheet with a laminated adhesive layer over a thermoplastic resin sheet, which is an incombustible decorative sheet with an adhesive layer containing (meth)acrylic acid ester copolymer and specific flame retardant, was proposed This decorative sheet has good incombustibility and workability, but either adhesion or heat-resistance is insufficient.

C. Problem to be solved by the invention

[0009] The purpose of the Invention is to provide an adhesive composition that is suitable for an adhesive layer of a decorative sheet in order to obtain an excellent decorative sheet that has incombustibility as specified by the Building Standards Act and has excellent tackiness, workability, heat-resistance, and adhesion.

D. Means to solve the problem

[0010] As a result of research, the Inventor found that the adhesive composition contains (meth)acrylic acid ester copolymers; and the copolymers can achieve the aforementioned purpose by containing (meth)acrylic acid ester, polymerizable compounds containing carboxyl groups and carbon-carbon double bonds, and polymerizable compounds containing glycidyl groups and carbon-carbon double bonds as constituent monomers at a specific rate of amount.

E. Effects of the invention

[0012] The adhesive composition of the Invention has incombustibility as specified by the Building Standards Act and can be used as an adhesive layer of a decorative sheet that has excellent tackiness, workability, heat-resistance, and adhesion.

F. Mode for carrying out the invention

[0018] Concerning Component (A), when deeming the total amount of monomers that constitute Component (A) as 100% by mass, composition amount 'b' (% by mass) of monomer (A-b) and composition amount 'c' (% by mass) of monomer (A-c) fulfill the formula (1) below:

$$10 \leq b + 40c \leq 26 \quad (4 \leq b \leq 14, 0.05 \leq c \leq 0.45).$$

[0019] In formula (1), if the value of (b+40c) is less than 10, adhesion and heat-resistance easily become insufficient. If the value of (b+40c) is more than 26, problems with tackiness and workability easily arise and the preservability of (meth)acrylic acid ester copolymer easily becomes insufficient. Preferable conditions are $12 \leq b + 40c \leq 22$. The value of 'b' is 4 to 14% by mass or, preferably, 5 to 12% by mass, and the value of 'c' is 0.05 to 0.45% by mass or, preferably, 0.1 to 0.35% by mass. If the value of 'b' is less than the aforementioned range, it easily comes to have poor adhesion or heat-resistance and if it is more than the aforementioned range, it easily comes to have problems with waterproof performance and workability. If the value of 'c' is less than the aforementioned range, it easily comes to have poor heat-resistance and if it is more than the aforementioned range, it easily comes to have problems with tackiness and workability. The Inventor found that good adhesion, tackiness, workability, and heat-resistance can be obtained by having 'b' and 'c' fulfilling the aforementioned formula (1) based on the knowledge that carboxyl groups have an impact on adhesion and they also have an impact on heat-resistance by the reaction with glycidyl groups.

[0020] It is preferable for Component (A) to contain (meth)acrylic acid ester containing hydroxy groups (A-d) additionally as its constituent monomer. Hydroxy groups of monomer (A-d) can add an appropriate degree of cross-linkage as adhesive by reacting with isocyanate groups of Component (B), which are explained later.

[0022] There is no specific restriction on the copolymer form of Component (A) and it can be any of random, block, and graft copolymers or an optional combination thereof.

[0023] Component (A) can be manufactured using various publicly-known methods. For example, the bulk polymerization method, solution polymerization method, suspension polymerization method, emulsion polymerization method, or other radical polymerization methods can be selected, as necessary. ...

[0024] The mass-average molecular weight of Component (A) is preferably 300 thousand

to 1,200 thousand and the optimal is 400 thousand to 800 thousand. If it is less than 300 thousand, cohesion is reduced and heat-resistance, durability, and reliability can easily become insufficient. If it exceeds 1,200 thousand, Component (A) becomes too adhesive and hard to handle, and it is not economical in terms of the required amount of diluting solvent. ...

[0025] In addition, the glass-transition temperature of Component (A) is preferably -30°C or lower and the optimal is -40°C or lower. If the glass-transition temperature is higher than -30°C , tackiness can easily become insufficient in the low-temperature environment. ...

[0026] Component (B)

Component (B), an isocyanate compound, is a compound with an $-\text{N}=\text{C}=\text{O}$ structure in its molecule and it cross-links Component (A) and increases heat-resistance and cohesion.

[0028] The amount of component (B) is 0.10 to 0.40 parts by mass, or preferably 0.15 to 0.30 parts by mass, to 100 parts by mass of Component (A) by converting it to the amount of isocyanate groups. If it is less than the aforementioned lower limit, heat-resistance (dimension stability testing at 100°C) is insufficient in some cases. If it exceeds the aforementioned upper limit, tackiness decreases in some cases.

[0029] Component (C)

Component (C), a flame retardant, has no specific restrictions as long as it can add incombustibility, and various kinds of publicly-known flame retardants may be used. ...

[0031] Necessary and sufficient amount of Component (C) in order to stably satisfy the specifications for certification of incombustibility may be selected appropriately. In concrete terms, it depends on the capability of adding incombustibility of each kind of flame retardant, and the amount of Component (C) is around 10 to 50 parts by mass to 100 parts by mass of Component (A). If it is less than the aforementioned lower limit, it becomes difficult to obtain certification of incombustibility, and if it exceeds the aforementioned upper limit, tackiness easily becomes insufficient.

G. Examples

[0058] The Invention is explained using the examples below; however, the Invention is not limited to them.

[0059] Example 1

Manufacturing of Component (A)

Placed amounts (% by mass) indicated in Table 1 of acrylic acid butyl ester, 2-ethylhexyl acrylate, acrylic acid, glycidyl methacrylate, and methacrylic acid 2-hydroxyethyl ester in a reactor vessel along with acetic ether as diluting solvent and 2,2'-

azodiisobutyronitrile as catalyst, had them react in a nitrogen atmosphere, at a temperature of 70 to 80°C, for approximately 10 hours, and obtained (meth)acrylic acid ester copolymer (A).

[0060] Manufacturing of coating solution for an adhesive layer

Mixed 100 parts by mass of Component (A) obtained above with amounts (parts by mass) indicated in Table 1 of Components (B) and (C) and acetic ether as diluting solution, and manufactured the coating solution for an adhesive layer with 45% by mass of solid content. ...

[0063] Manufacturing of a decorative sheet

Applied the coating solution obtained above over a stripping sheet (Cerapeel WZ (product name), thickness of 38 μ m) manufactured by Toray Advanced Film Co., Ltd. so that the thickness after drying becomes 45 μ m and formed an adhesive layer by drying them at 90°C. Next, manufactured a decorative sheet by bonding an adhesive layer that comes into contact with a polyvinyl chloride resin composition film (S4970FC25382 (product name), thickness of 100 μ m) manufactured by Riken Technos Corporation as a thermoplastic resin sheet. The following tests were conducted with the obtained decorative sheet. Results are indicated in Table 1.

[0072] Examples 3 to 17, Comparison Examples 1 to 9, and Reference Example 6

Manufactured decorative sheets in the same way as Example 1 except for changing the amount of monomers that constitute Component (A) in Example 1 as indicated in Table 1, and then conducted evaluation testing. Results are indicated in Table 1.

[0073] Table 1 (Table 1-1, Table 1-2)

[0074] As is obvious based on Table 1, the decorative sheets in Examples 1 to 16 fully satisfy the specifications for certification of incombustibility and are excellent in tackiness, workability, heat-resistance, and adhesion. At the same time, the decorative sheets in Comparison Examples 1 to 8 where amounts of Component (A-b) and Component (A-c) are outside the range specified by the Invention were poor in either of tackiness, workability, heat-resistance, or adhesion.

[0075] Examples 18 to 21 and Reference Examples 7 and 8

Manufactured decorative sheets in the same way as Example 1 except for changing the amount of Component (B) in Example 1 as indicated in Table 1, and then conducted evaluation testing. Results are indicated in Table 2 along with Example 1.

[0076] Table 2

2. Features of the Invention

According to the above, the Invention can be understood as stated below.

(1) Interior materials used when constructing buildings are required to use fire-safe

materials under the Building Standards Act and materials that have obtained a certification of incombustibility from the Ministry of Land, Infrastructure, Transport and Tourism are used. Building materials that are decorated by a decorative sheet are also required to obtain a certification of incombustibility and therefore various proposals had been made ([0002] and [0003]).

(2) However, conventional decorative sheets did not fully satisfy the specifications for certification of incombustibility and their tackiness and workability were not satisfactory ([0006]). In addition, an incombustible decorative sheet with an adhesive layer containing (meth)acrylic acid ester copolymer and specific flame retardant was also proposed. This sheet had good incombustibility and workability, but had the problem that either adhesion or heat-resistance was not satisfied ([0007]).

(3) The purpose of the Invention is to provide a (meth)acrylic acid ester copolymer that can be used for an adhesive composition suitable for an adhesive layer of a decorative sheet in order to obtain a decorative sheet that has incombustibility as specified by the Building Standards Act and has excellent tackiness, workability, heat-resistance, and adhesion (Claim 1, [0009]).

(4) (Meth)acrylic acid ester copolymer related to the Invention has the technical feature that it contains (meth)acrylic acid ester (Component a), polymerizable compound containing carboxyl groups and carbon-carbon double bonds (Component b), and polymerizable compounds containing glycidyl groups and carbon-carbon double bonds (Component c) in a specific ratio of amount, as well as (meth)acrylic acid ester containing hydroxy groups (Component d) as constituent monomers (Claim 1, [0010], [0020]).

3. Grounds for Rescission 1 (Error in the determination concerning the existence of an inventive step of the Invention against Cited Invention 1)

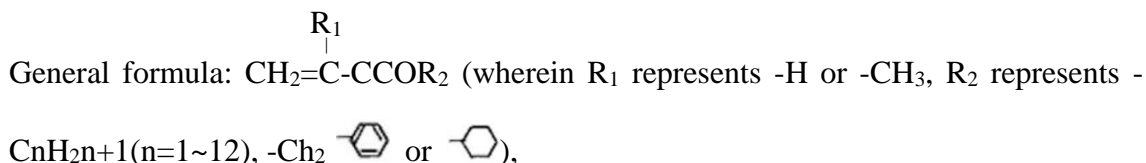
(1) Cited Invention 1 and common features and differences between the Invention and Cited Invention 1

A. Statement in Exhibit Ko 7 Document

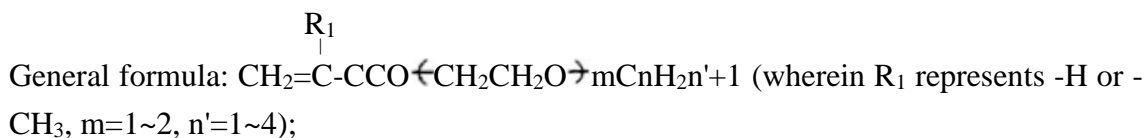
Exhibit Ko 7 Document states as follows (Exhibit Ko 7).

(A) Claim

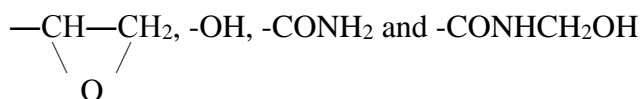
An adhesive composition that consists of 85 to 99.5 parts by weight of a first component, which mainly consists of either ester indicated as follows:



or ester indicated as follows:



0.5 to 15 parts by weight of a second component, which consists of ethylene-type unsaturated compound monomers that can copolymerize with the first component and contains carboxyl groups; and ethylene-type unsaturated compound monomers that can copolymerize with said first component and/or said second component and that contains at least one functional group selected from the groups of the following chemical substances:



wherein the adhesive composition contains mainly copolymers with a third component that account for a rate of 0.5 to 15 parts by weight to 100 parts by weight, which is the total amount of said first component and said second component, and 10% or more of carboxyl groups in the copolymer is made to react with alkali metal.

(B) Detailed explanation of the invention

- a. The present invention is related to an adhesive composition, for example, that is preferably used by laminating it over a plasticized polyvinyl chloride sheet (page 1, right column, lines 6 through 8).
- b. The third component contains cross-linking functional groups (at least one from epoxy groups, hydroxy groups, amide groups, and N-methylol-amide groups) that can copolymerize with the first component and/or the second component (in particular, the

first component). The following is listed as the third component: glycidyl methacrylate, glycidyl acrylate, β -hydroxyethyl methacrylate, β -hydroxyethyl acrylate, acrylamide, methacrylamide, N-methylol-acryamide, N-methylol-methacrylamide, etc. One kind only or two or more kinds of the above in combination can be copolymerized with the first component (page 2, right column, lines 41 through page 3, left column, line 8).

c. Next, the adhesive composition in the example of the present invention is explained. In order to obtain this composition, installed a cooler and thermometer on a 3L three-neck flask, added 692g of acetic ether to the flask, then, added, for example, a monomer mixture with a composition indicated in Table 5 below, increased the temperature gradually up to 80°C while displacing with N₂ gas in the reacting system, and conducted the reaction for two hours. Remaining monomer was dripped for two hours and then reacted for three hours. After the end of the reaction, added 308g of ethanol and diluted it. Property and performance of the cross-linked polymer was solid content: 40.7%, viscosity: 400cps, and peel (g/2cm): 1400AF. Conducted a reaction by adding ethanol solution of calcium hydroxide (note by the judgment: "calcium" is found to be a writing error of "potassium") of 20% by weight obtained by dissolving KOH in ethyl alcohol to the aforementioned cross-linked polymer, neutralized carboxyl groups in the polymer for the specified amount, and prepared a final adhesive polymer. Performance of the adhesive polymer is indicated in Table-6 below. Concerning the abbreviation of compound names in Table-5 (the same applies to the Tables below), n-BA refers to n-butyl acrylate, EA refers to ethyl acrylate, and GAM (note by the judgment: "GAM" is found to be a writing error of "GMA") refers to glycidyl methacrylate, respectively (page 4, right column, 2nd line from the bottom through page 5, right column, line 14).

Table-5

	Examples 1 through 5
2EHA	399.0
n-BA	105.0
EA	140.0
AA	47.5
GMA	3.5
AIBN	1.5

d. According to the present invention, it is considered that, in the aforementioned copolymer, functional groups consisting of epoxy groups, hydroxy groups, amide groups, or N-methylol-amide groups among the third component conducted cross-linking reaction with epoxy groups, hydroxy groups, amide groups, or N-methylol-amide groups among the third component or carboxyl groups among the second component in adjacent

copolymers, formed complicated cross-linking structures between molecules, increased cohesion, and prevented shrinkage. As mentioned above, excellence in strong adhesiveness or cohesion and shrinkage-resistance and the fact that the specified amount of the carboxyl groups in the copolymer above is neutralized by alkali metal greatly contributed to increasing the resistance to gasoline. For example, it can provide an adhesive composition that is excellent for the exterior coating of automobiles. In this case, a carboxyl group that is neutralized by alkali metal is considered to be attracted electrostatically and bonded with carbonyl groups ($>C=O$) by carboxyl groups, etc. in adjacent copolymers and it also contributes to increasing cohesion.

In order to obtain significant action effects as above, it is essential to limit the ratio of each component of the adhesive composition of the present invention to the aforementioned range.

In other words, if acrylic acid ester and/or methacrylic ester as the first component are less than 85 parts by weight, the adhesive component becomes too small in amount and it results in poor adhesiveness. If they exceed 99.5 parts by weight, the ratio of the second component (i.e., the amount of carboxyl groups) becomes too small and resistance to gasoline, cohesion, and shrinkage-resistance weaken. If the amount of the third component is less than 0.5 parts by weight to 100 parts by weight of the sum total of the first and second components, fewer cross-links fail to generate cohesion. If the relevant amount exceeds 15 parts by weight, too many cross-links result in weakening adhesion and adhesiveness. Furthermore, it is important that 10% or more of the carboxyl groups in the copolymer is made to react (is neutralized) with alkali metal. If the reaction rate of the carboxyl groups is less than 10%, resistance to gasoline or resistance to oil significantly decreases and the adhesive composition becomes unusable. The reaction rate is preferably 20% or more and 30% or more is further more preferable (page 2, left column, line 13 through right column line 7).

e. The adhesive composition obtained by the present invention mainly consists of copolymers of the first to third components. It is preferable to add tackifier resin (tackifier) to the copolymers to constitute the adhesive composition with a mixture of the above. In other words, the addition of tackifier resin additionally increases adhesion and good resistance to gasoline will be maintained. For this reason, the tackifier resin is preferred to be added at the ratio of 50 parts by weight or lower to 100 parts by weight of the adhesive composition that consists of the aforementioned copolymers. If the additive amount exceeds 50 parts by weight, the ratio of copolymers decreases and cohesion and shrinkage-resistance deteriorate (page 3, left column, line 13 through line 24).

f. In comparison with the aforementioned examples, the case where the kinds of

responsive monomers were changed to various kinds is explained below. The monomer system that constitutes polymers is indicated in Table-7 below; the properties and performance of generated cross-linked polymers are indicated in Table-8 below; and the performance when the carboxyl groups of the polymer were neutralized with alkali metal is indicated in Table-9 below, respectively. In Table-7, the abbreviations of the compound names are as follows: MMA refers to methyl methacrylate, MEA refers to methoxyethyl acrylate, EEA refers to ethoxyethyl acrylate, MAA refers to methacrylic acid, HEMA refers to β -hydroxyethyl methacrylate, and N-MAM refers to N-methylol-acrylamide, respectively.

Table -7

	Example 6	Example 7	Example 8	Example 9	Example 10	Example 11	Example 12	Example 13
2EHA	224	224	224	399	175	175	175	175
n-BA	175	175	175	—	329	329	238	329

	Example 6	Example 7	Example 8	Example 9	Example 10	Example 11	Example 12	Example 13
EA	—	—	—	—	—	—	—	140
MA	140	140	140	245	140	140	—	—
MMA	105	105	105	—	—	—	—	—
MEA	—	—	—	—	—	—	140	—
EEA	—	—	—	—	—	—	91	—
AA	17.5	17.5	17.5	47.5	49	35	45.5	31.5
MAA	—	—	19	—	—	—	—	—
Maleic anhydride	—	—	—	—	—	7	—	—
Itaconic acid	—	—	—	—	—	—	—	7
GMA	—	—	4.5	3.5	—	3.5	3.5	3.5
HEMA	—	—	—	—	7	—	—	—
N-MAM	3.5	—	—	—	—	—	—	—
Acrylamide	—	3.5	—	—	—	—	—	—
AIBN	2.2	2.2	2.2	2.2	1.4	2	1.4	1.4
Total of monomers	665	665	685	695	700	689.5	693	686
Ethyl acetate	700	700	700	700	700	700	700	700
Diluted ethanol	—	—	—	—	301	308	301	301
Grand total	1365	1365	1385	1395	1701	1697.5	1694	1687

Table-8

	Example 6	Example 7	Example 8	Example 9	Example 10	Example 11	Example 12	Example 13
Solid content (%)	48.5	48.6	49.8	49.5	40.6	42.3	40.8	44.2
Viscosity (cps)	3100	5700	1900	2000	3800	7750	15000	5650
Peel (g/2cm)	1025AF	675AF	1025AF	1600AF	1000AF	1000AF	2900AF	750AF
Cohesion	Disconnection by 0.6mm	Disconnection by 16mm	None	CF for 9 min.	Disconnection by 5.6mm	Disconnection by 2mm	Disconnection by 2.1mm	Disconnection by 0.2mm

Table-9

	Example 6	Example 7	Example 8	Example 9	Example 10	Example 11	Example 12	Example 13
Degree of neutralization by KOH	50%	50%	50%	100%	100%	100%	—	100%
Degree of neutralization by NaOH	—	—	—	—	—	—	50%	—
Peel (g/2cm)	800AF	400AF	850AF	720AF	1000AF	1000AF	720AF	850AF
Cohesion	No disconnection	No disconnection	No disconnection	No disconnection	No disconnection	No disconnection	No disconnection	No disconnection
Resistance to gasoline	Good	Good	Good	Good	Good	Good	Good	Good

According to these results, neutralizing the specified amount of carboxyl groups in the cross-linked polymer obtained by combining the first to third components approximately can drastically increase cohesion, in particular, and increase resistance to gasoline (page 5, left column, lines 37 through page 7, left column, line 5).

B. Finding

According to the aforementioned statement, it is found that the details of Cited Invention 1 and common features and differences between the Invention and Cited Invention 1 are as recognized by the Decision (No. 2, 3. (2) A. above) (however, whether Difference 3 is a substantive difference or not is not to be determined here).

(2) The ease of conceiving of Difference 1

A. Examination

(A) Difference 1 is that the copolymer in Cited Invention 1 is different from the Invention and does not contain Component d as a constituent monomer. As indicated in (1) A. (B) b. above, Exhibit Ko 7 Document indicates "cross-linking functional groups (at least one from the epoxy groups, hydroxy groups, amide groups, and N-methylol-amide groups)" as the third component that is copolymerized with the first component (Component a) and

the second component (Component b) or either of them (in particular, the first component).

Then, whether a person skilled in the art could have easily conceived of using a monomer containing epoxy groups (Component c) and a monomer containing hydroxy groups (Component d) in combination as the third component in Cited Invention 1 is examined below.

(B) First, as indicated in (1) A. (A) and (B) a. and b. above, Cited Invention 1 is an invention related to an adhesive composition that is excellent in use by laminating it over a plasticized polyvinyl chloride sheet and it aims to increase resistance to gasoline and resistance to oil by reacting (neutralizing) 10% or more of the carboxyl groups in the copolymer with alkali metal.

Based on the above, for the Invention, which is an invention of a compound for an adhesive composition that is used for an adhesive layer of a decorative sheet, and Cited Invention 1, the technological field and the problem to be solved by the invention are not necessarily the same and therefore there was little motivation to add improvement to Cited Invention 1 to solve the problem of the Invention in the first place.

(C) As mentioned in (1) A. (B) b. above, Exhibit Ko 7 Document lists eight monomers as examples of four kinds of monomers that can be selected as the third component and it indicates that only one or two or more kinds from among the four kinds of monomers can be used in combination to copolymerize them with the first component. Based on the indication, there may be cases where two through four kinds of monomers among the aforementioned monomers are used in combination for the third component in Cited Invention 1 in addition to cases where only one kind is selected. Therefore, the combination is not limited to six cases that the Defendant alleged even if the combination is limited to cases of using monomers in combination that belong to different functional groups.

According to the evidence (Exhibit Ko 7), it is found that Exhibit Ko 7 Document does not indicate the example of synthesis where monomers containing epoxy groups (Component c) and monomers containing hydroxy groups (Component d) are combined and it does not give any specific indication concerning the effects, etc. of containing Component d as constituent monomers. Consequently, it cannot be said that Exhibit Ko 7 Document discloses a suggestion to select two kinds of monomers, a monomer containing epoxy groups and a monomer containing hydroxy groups, from among multiple combinations as the technical idea of Cited Invention 1 and the fact that specific effects can be obtained by selecting a monomer containing hydroxy groups.

In consideration of these circumstances together, it should be said that there is little reason for a person skilled in the art who came across Exhibit Ko 7 Document to select

two kinds of monomers, a monomer containing epoxy groups and a monomer containing hydroxy groups, from among multiple combinations as the third component in Cited Invention 1.

(D) As mentioned above, for the Invention and Cited Invention 1, the technological field and the problem to be solved by the invention are not necessarily the same and therefore there is little motivation to add an improvement to Cited Invention 1 to solve the problem of the Invention in the first place. In addition, according to the details indicated in Exhibit Ko 7 Document, there is little reason for a person skilled in the art to select two kinds of monomers, a monomer containing epoxy groups and a monomer containing hydroxy groups, from among multiple combinations. Therefore, it cannot be said that a person skilled in the art who came across Exhibit Ko 7 Document had motivation to conceive of the composition of the Invention related to Difference 1.

Consequently, it cannot be said that, in Cited Invention 1, a person skilled in the art could have easily conceived of the idea of containing Component d as a constituent monomer at the time of the filing of the Application.

B. Allegation of the Defendant

(A) The Defendant alleged that it is natural to use the third component with two or more kinds of monomers in Cited Invention 1 and to replace part of glycidyl methacrylate with another third component, and that according to Exhibit Ko 7 Document, a combination of epoxy groups and hydroxy groups can be extracted as a specific technical idea.

However, as examined in A. (C) above, according to Exhibit Ko 7 Document, the number of combinations of monomers that can be selected as the third component in Cited Invention 1 is more than the number that the Defendant alleged. In Exhibit Ko 7 Document, effects that can be obtained in cases of selecting a monomer containing hydroxy groups and in cases of combining epoxy groups and hydroxy groups are not indicated at all. Based on the above, it cannot be said that it is natural to select two kinds of monomers, a monomer containing epoxy groups and a monomer containing hydroxy groups, from among eight monomers in four kinds that are indicated as options of the third component in Exhibit Ko 7 Document and that these combinations can be extracted as a specific technical idea.

Therefore, the aforementioned allegation of the Defendant is groundless.

(B) The Defendant alleged that using a monomer containing glycidyl groups and a monomer containing hydroxy groups in combination as a monomer of acrylic resin is a general technology since it is indicated in both Exhibit Ko 8 Document and Exhibit Ko 9 Document.

As mentioned later, however, in Cited Invention 2 and Cited Invention 3, a monomer

containing epoxy groups and a monomer containing hydroxy groups are used in combination, but the technological fields are not necessarily the same and the problems to be solved by the invention are different for Cited Invention 1, Cited Invention 2, and Cited Invention 3. Based on the above, it cannot be said that it is general practice to use the aforementioned monomers in combination in the third component of Cited Invention 1 on the basis of the statements in Exhibit Ko 8 Document and Exhibit Ko 9 Document.

Therefore, the aforementioned allegation of the Defendant is groundless.

(3) The ease of conceiving of Difference 2

As mentioned in (2) above, it is impossible to say that Difference 1 could have been easily conceived of by a person skilled in the art. The ease of conceiving of Difference 2 is also examined based on the case.

A. Examination

(A) Concerning Difference 2, when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer as 100% by mass, the values of composition amount 'b' of Component b and composition amount 'c' of Component c are " $10 \leq b + 40c \leq 26$ ($0.05 \leq c \leq 0.45$)" in the Invention, while 'c' is 0.5 and 'b+40c' is 26.8 in the copolymer in Cited Invention 1.

Then, whether a person skilled in the art could have easily conceived of changing the values of 'b' and 'c' above in Cited Invention 1 to adjust them within the range of values in the Invention or not is examined below.

(B) First, as indicated in (2) A. (B) above, it should be said that the technological field and problem to be solved by the invention are not necessarily the same between the Invention and Cited Invention 1.

(C) As indicated in (1) A. (B) f. above, the Examples of Cited Invention 1 include an example wherein the third component in Cited Invention 1 was changed from N-methylol-acrylamide to acrylamide without changing the ratio of the amount, and peel (g/2cm) changed from "1025FA" to "675AF" (the term "peel" refers to the force required for peeling (Exhibit Ko 7)) and cohesion changed from "Disconnection by 0.6mm" to "Disconnection by 16mm" (Table-8, Examples 6 and 7).

According to the above, epoxy groups, hydroxy groups, amide groups, and N-methylol-amide groups that are cross-linking functional groups are considered to show different adhesion or cohesion depending on the kind and therefore, monomers are not equivalent in terms of adhesion and cohesion (concerning the values of cohesion ("Disconnection by 16mm") for Example 7 in Table-8, when comparing it with values of other Examples, it may be a writing error of "Disconnection by 1.6mm"; however, even if it is a writing error, there is a difference of nearly three times the value than Example 6

and the writing error does not have an impact on the conclusion.).

Based on the above, it cannot be said that it is natural or easy for a person skilled in the art to replace each monomer with another monomer in the same amount or to maintain the overall composition amount of the third component by reducing the composition amount of glycidyl methacrylate (Component c) for the portion of a monomer containing hydroxy groups (Component d) that was introduced.

(D) Furthermore, according to (1) A. (A) above, in Cited Invention 1, the third component (glycidyl methacrylate corresponds to it) is 0.5 to 15 parts by weight to 100 parts by weight of the total amount of the first component and the second component. When deeming the total amount of the first component through the third component as 100% by mass, the composition amount of the third component is 0.5 to 13.0% by mass ($0.5/(100+0.5)\times 100$ to $15/(100+15)\times 100$).

Based on the above, in Cited Invention 1, in order to set the composition amount of glycidyl methacrylate at 0.45% by mass or less, which is within the range of values in the Invention, it is necessary to reduce the composition amount to below 0.5% by mass, which is the lower limit of the composition amount of the third component. However, no technical reasons are found to conduct such adjustment according to the statement in Exhibit Ko 7 Document.

(E) As mentioned above, for the Invention and Cited Invention 1, the technological field and the problem to be solved by the invention are not necessarily the same; monomers are not equivalent in terms of adhesion and cohesion; it is not natural or easy for a person skilled in the art to replace monomers or to maintain the composition amount; and no technical reasons are found that a person skilled in the art would reduce the composition amount of glycidyl methacrylate to less than the lower limit of the composition amount of the third component. Based on these facts, it cannot be said that a person skilled in the art who came across Exhibit Ko 7 Document had motivation to conceive of the composition of the Invention related to Difference 2.

Consequently, it cannot be said that a person skilled in the art could have easily conceived of changing the values of composition amount 'b' of Component b and composition amount 'c' of Component c in Cited Invention 1 to adjust them within the range of values in the Invention, at the time of the filing of the Application.

B. Allegation of the Defendant

(A) The Defendant alleged on the basis of the details of inventions indicated in Exhibit Otsu 6 Document through Exhibit Otsu 8 Document that, in the technological field of adhesives, concerning a (meth)acrylic acid ester copolymer containing Component b and Component c, a person skilled in the art normally sets composition amount 'c' of

Component c at 0.45 or less, for example, 0.251 to 0.4% by mass, while satisfying the range of values in the Invention.

However, according to the evidence (Exhibits Otsu 6 through 8), the invention indicated in Exhibit Otsu 6 Document is found to be an invention related to the processing method to make adhesive the surface of a flexible layer that is provided over plastic film, paper, fabric, or other basic materials; the invention indicated in Exhibit Otsu 7 Document is found to be an invention of an adhesive for heat-resistant and removable masking tape, sheets, labels, etc.; and the invention indicated in Exhibit Otsu 8 Document is found to be an invention of emulsion and pressure-sensitive adhesive. Since the technological field and property and performance required for tackiness agents or adhesives are not necessarily the same between these inventions and Cited Invention 1, values adopted in these inventions do not naturally apply to Cited Invention 1.

In addition, according to the evidence (Exhibits Otsu 6 through 8), in the invention indicated in Exhibit Otsu 6 Document through Exhibit Otsu 8 Document, (meth)acrylic acid ester copolymer that satisfies the range of values of " $10 \leq b + 40c \leq 26$ ($4 \leq b \leq 14$, $0.05 \leq c \leq 0.45$)" in the Invention is indicated as one example of synthesis; however, since there are other examples of syntheses that do not satisfy this range of values, it cannot be said that it is a natural conduct to set the values of 'b' and 'c' to satisfy the aforementioned range of values.

Based on the above, in Exhibit Otsu 6 Document through Exhibit Otsu 8 Document, even if there is an example of synthesis of (meth)acrylic acid ester copolymer that satisfies the range of values in the Invention, it cannot be immediately said that a person skilled in the art normally conducts or can easily conceive of the adjustment of the composition amounts in the same way concerning Cited Invention 1. In light of the examination in A. above, concerning Cited Invention 1, it cannot be said that it is natural or easy to set composition amount 'c' of Component c as 0.45 or lower while satisfying the range of values in the Invention.

Therefore, the aforementioned allegation of the Defendant is groundless.

(B) The Defendant alleged on the basis of the details of the statement in the Description that limitation of the values specified by the Invention concerning Component (A) has meaning only with an adhesive composition that contains the copolymer of the Invention and both Component (B) and Component (C) in the specified amount and therefore the limitation of values has no technical meaning concerning Component (A) itself.

However, as mentioned in 1. (2) g. above, in the results of evaluation testing indicated in Table 1-1 and Table 1-2 of the Description, the decorative sheets in Examples 1 through 16, wherein composition amount 'b' of Component b and composition amount 'c' of

Component c satisfy the range of values of " $10 \leq b + 40c \leq 26$ ($4 \leq b \leq 14$, $0.05 \leq c \leq 0.45$)" as specified by the Invention, satisfy the specifications for certification of incombustibility and are excellent in tackiness, workability, heat-resistance, and adhesion; however, the decorative sheets in Comparison Examples 1 through 8 are poor in any of tackiness, workability, heat-resistance, or adhesion (paragraph [0074], Table 1-1 and Table 1-2). Based on the above, in the Invention, it is obvious that specifying the range of values above concerning Component (A) shows technical effects to an extent concerning the tackiness, workability, heat-resistance, and adhesion of decorative sheets.

In addition, even if the aforementioned effects generated by Component (A) in the Invention are affected to an extent by the kind or content amount of Component (B) or Component (C), which are not matters specifying the invention of the Invention, the technical meaning of the range of values in the Invention is not immediately lost by that fact.

Therefore, the aforementioned allegation of the Defendant is groundless.

(4) Grounds for Rescission 1

Based on the examination above, in Cited Invention 1, it cannot be said that a person skilled in the art could have easily conceived of the composition of the Invention related to Difference 1 or that a person skilled in the art could have easily conceived of the composition of the Invention related to Difference 2 at the time of the filing of the Application. Therefore, it should be said that Grounds for Rescission 1 are well-founded, without need to make a determination concerning Difference 3.

4. Grounds for Rescission 2 (Error in the determination concerning the existence of an inventive step of the Invention against Cited Invention 2)

(1) Cited Invention 2 and common features and differences between the Invention and Cited Invention 2

A. Statement in Exhibit Ko 8 Document

Exhibit Ko 8 Document indicates as follows (Exhibit Ko 8).

(A) Claim

[Claim 1]

Adhesive tape for removing foreign matters attached to a semiconductor wafer with a laminated adhesive layer over a supporting film, wherein the adhesive layer consists of a water emulsion type adhesive with a gel fraction containing a non-ionic surface-active agent of 50% or more.

(B) Problem to be solved by the invention

[0007] However, by the aforementioned proposed method, glue residue can easily be generated on the semiconductor wafer after affixing and removing adhesive tape and this

becomes a new contamination source. Therefore, there is a problem that the expected purpose to clean the wafer cannot be fully achieved.

[0008] In consideration of the circumstances above, the present invention aims to reduce glue residue after removing adhesive tape by using specific adhesive tape in the dry cleaning method using adhesive tape that is more useful than a wet cleaning method, to adsorb and remove foreign matters attached to the semiconductor wafer at a high removal rate, and, at the same time, to clean and remove the aforementioned glue residue, if any, easily by rinsing.

(C) Detailed explanation of the invention

[0022] The following copolymerized monomers containing cross-linking functional groups are listed: monomer containing carboxyl groups, such as acrylic acid, methacrylic acid, maleic anhydride, itaconic acid, etc.; monomer containing hydroxy groups, such as acrylic acid 2-hydroxyethyl ester, methacrylic acid 2-hydroxyethyl ester, 2-hydroxypropyl acrylate, 2-hydroxypropyl methacrylate, N-methylolacrylamide, etc.; monomer containing amide groups, such as acrylamide, methacrylamide, etc.; monomer containing epoxy groups, such as glycidyl acrylate, glycidyl methacrylate, etc.; and monomer containing amide groups, such as N,N- dimethylaminoethyl acrylate, etc. These monomers are used to adjust the gel fraction and adhesion of adhesives and, generally, are used at 0.1 to 30 parts by weight or preferably 2 to 10 parts by weight, to 100 parts by weight of (meth)acrylic acid alkyl ester, which is the main monomer.

[0030] Example 1

Added 1 part by weight of poly(oxyethylene) nonylphenyl ether as a non-ionic surface-active agent and then added 80 parts by weight of n-butyl acrylate, 10 parts by weight of acrylonitrile, 5 parts by weight of acrylic acid, 5 parts by weight of 2-hydroxyethyl acrylate, and 5 parts by weight of acrylic acid glycidyl ester, and 0.2 parts by weight of ammonium peroxydisulfate, increased the temperature to 80°C, emulsion polymerized them while stirring, and thereby prepared an acrylic water emulsion type adhesive that contains acrylic polymer of 970,000 number average molecular weight and the aforementioned non-ionic surface-active agent.

B. Finding

According to the aforementioned statement, it is found that the details of Cited Invention 2 and common features and difference between the Invention and Cited Invention 2 are as recognized by the Decision (No. 2, 3. (2) B. above) (however, whether Difference 5 is a substantive difference or not is not to be determined here).

(2) The ease of conceiving of Difference 4

A. Examination

(A) Concerning Difference 4, when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer as 100% by mass, the values of composition amount 'b' of Component b and composition amount 'c' of Component c are " $10 \leq b + 40c \leq 26$ ($0.05 \leq c \leq 0.45$)" in the Invention, while 'c' is 4.8 and 'b+40c' is 196.8 in Cited Invention 2.

Then, whether a person skilled in the art could have easily conceived of changing the values of 'b' and 'c' above in Cited Invention 2 to adjust them within the range of values in the Invention or not is examined below.

(B) First, as indicated in (1) A. (A) and (B) above, Cited Invention 2 is an invention of adhesive tape to remove foreign matters attached to a semiconductor wafer and it aims to reduce glue residue after removing adhesive tape, to adsorb and remove foreign matters attached to the semiconductor wafer at a high removal rate, and, at the same time, to clean and remove the aforementioned glue residue, if any, easily by rinsing.

Based on the above, for the Invention, which is an invention of a compound for an adhesive composition that is used for an adhesive layer of a decorative sheet, and Cited Invention 2, the technological field and the problem to be solved by the invention are not necessarily the same and therefore there is little motivation to add improvement to Cited Invention 2 to solve the problem of the Invention in the first place.

(C) As mentioned in No. 2, 3. (2) B. above, Cited Invention 2 is a (meth)acrylic acid ester copolymer polymerizing 80 parts by weight of n-butyl acrylate (Component a), 10 parts by weight of acrylonitrile, 5 parts by weight of acrylic acid (Component b), 5 parts by weight of 2-hydroxyethyl acrylate (Component d), and 5 parts by weight of acrylic acid glycidyl ester (Component c). In order to achieve the composition of the Invention related to Difference 4, the composition amount of acrylic acid glycidyl ester, which is 4.8% by mass, needs to be changed to 1/10 or lower to 0.45% by mass or less.

However, as mentioned in (1) A. (C) above, in Exhibit Ko 8 Document, five kinds of monomers (a monomer containing carboxyl groups, a monomer containing hydroxy groups, a monomer containing amide groups, a monomer containing epoxy groups, and a monomer containing amide groups) are indicated as examples as copolymerized monomers containing cross-linking functional groups and then it indicates that these monomers are used for adjusting the gel fraction and adhesion of adhesives, and that, generally, these monomers are used at the rate of 0.1 to 30 parts by weight, or preferably 2 to 10 parts by weight to 100 parts by weight of (meth)acrylic acid alkyl ester (paragraph [0022]); however, there are no statements focused on acrylic acid glycidyl ester or statements related to specific effects, etc. achieved by reducing the composition amount to 1/10 or lower.

Based on the above, in Cited Invention 2, in order to adjust the composition amount

of glycidyl methacrylate within the range of values in the Invention, it is necessary to focus on acrylic acid glycidyl ester from among the five kinds of monomers above and to adjust its composition amount to be 1/10 or lower. However, even examining Exhibit Ko 8 Document, no technical reasons are found to conduct such adjustment.

(D) As mentioned above, for the Invention and Cited Invention 2, the technological field and the problem to be solved by the invention are not necessarily the same and therefore there is little motivation to add an improvement to Cited Invention 2 to solve the problem of the Invention in the first place. In addition, there are no technical reasons for a person skilled in the art to focus on acrylic acid glycidyl ester from among the five kinds of monomers and to adjust its composition amount to be 1/10 or lower. Based on these facts, it cannot be said that a person skilled in the art who came across Exhibit Ko 8 Document had motivation to conceive of the composition of the Invention related to Difference 4.

Consequently, it cannot be said that a person skilled in the art could have easily conceived of changing the values of composition amount 'b' of Compound b and composition amount 'c' of Compound c in Cited Invention 2 to adjust them within the range of values in the Invention at the time of the filing of the Application.

B. Allegation of the Defendant

(A) The Defendant alleged that a person skilled in the art can freely change the amount of monomers within the range that satisfies the specifications of "0.1 to 30 parts by weight to 100 parts by weight of (meth)acrylic acid alkyl ester" to adjust the gel fraction and adhesion and that since copolymerized monomers containing multiple cross-linking functional groups are mutually equal, a person skilled in the art can set the ratio between copolymerized monomers as necessary.

However, as examined in A. above, no technical reasons for conducting adjustment to drastically reduce the composition amount of acrylic acid glycidyl ester in Cited Invention 2 are found and, as examined in 3. (3) A. (C) above, each monomer that is a cross-linking functional group is not equal in terms of adhesion and cohesion. Based on these facts, it cannot be said that a person skilled in the art could have easily conceived of the range of values in the Invention by setting the composition amount of each monomer and the ratio between monomers in Cited Invention 2 as necessary.

Therefore, the aforementioned allegation of the Defendant is groundless.

(B) The Defendant alleged on the basis of the details of inventions indicated in Exhibit Otsu 6 Document through Exhibit Otsu 8 Document that, in the technological field of adhesives, concerning a (meth)acrylic acid ester copolymer containing Component b and Component c, a person skilled in the art normally sets composition amount 'b' of Component b at 4 to 6.27% by mass and composition amount 'c' of Component c at 0.251

to 0.4% by mass, which is 0.45% by mass or less, while satisfying the range of values in the Invention.

However, in the same way as in the examination in 3. (3) B. (A) above, between Cited Invention 2 and the inventions indicated in Exhibit Otsu 6 Document through Exhibit Otsu 8 Document, the technological field and property and performance required for adhesives are not necessarily the same and there are examples of syntheses that do not satisfy the range of values in the Invention in each invention. Therefore, although there are examples of syntheses of (meth)acrylic acid ester copolymer that satisfy the range of values in the Invention in Exhibit Otsu 6 Document through Exhibit Otsu 8 Document, it cannot immediately be said that a person skilled in the art normally conducts or can easily conceive of the adjustment of the composition amounts in the same way.

Therefore, the aforementioned allegation of the Defendant is groundless.

(C) The Defendant made various other allegations; however, in light of the examinations above, all of the allegations are groundless.

(3) Grounds for Rescission 2

Based on the examination above, in Cited Invention 2, it cannot be said that a person skilled in the art could have easily conceived of the composition of the Invention related to Difference 4 at the time of the filing of the Application and therefore, it should be said that Grounds for Rescission 2 are well-founded, without need to make a determination concerning Difference 5.

5. Grounds for Rescission 3 (Error in the determination concerning the existence of an inventive step of the Invention against Cited Invention 3)

(1) Cited Invention 3 and common features and differences between the Invention and Cited Invention 3

A. Statement in Exhibit Ko 9 Document

Exhibit Ko 9 Document indicates as follows (Exhibit Ko 9).

(A) Claim

[Claim 1]

A bonding adhesive sheet that is also used as a dicing die bond, which consists of a base material and a bonding adhesive layer laminated removably over said base material, wherein: said bonding adhesive layer has pressure sensitive adhesiveness at normal temperature and has thermosetting property; the elastic modulus of the bonding adhesive layer before thermosetting is 1.0×10^3 to 1.0×10^4 Pa; melt viscosity of the bonding adhesive layer before thermosetting at 120°C is 100 to 200 Pa/sec.; and when the bonding adhesive layer before thermosetting is kept at a constant temperature of 120°C, the time when melt viscosity achieves the minimum value is 60 sec. or less.

(B) Problem to be solved by the invention

[0016] The present invention aims to reduce damage to bonding wires that are generated at stacking in the aforementioned "stack-type semiconductor device," and to resolve variations in the height of semiconductor devices that are attributable to defective accuracy in the thickness of the adhesive layer that bonds semiconductor chips, variations in the height from the substrate to the surface of semiconductor chips on the top layer, and the tilt of semiconductor chips on the top layer, etc.

(C) Best mode for working the invention

[0035] In particular, it is preferable to include a (meth)acrylic acid glycidyl ester unit and at least one kind of (meth)acrylic acid alkyl ester unit. In this case, the content rate of component units induced by (meth)acrylic acid glycidyl ester in copolymers is usually 0 to 80% by mass, or preferably 5 to 50% by mass. Introduction of glycidyl groups will increase compatibility with epoxy resin as a thermosetting component, which is explained later, and Tg after hardening, as well as heat-resistance. As a (meth)acrylic acid alkyl ester, it is preferable to use methyl (meth)acrylate, ethyl (meth)acrylate, butyl (meth)acrylate, etc. In addition, the introduction of a monomer containing hydroxy groups, such as hydroxyethyl acrylate, etc. facilitates control of the adhesive property and the adhesive physical property with adherents.

[0073] ... "bonding adhesive layer"

The composition of the bonding adhesive is stated below. These are common to Examples and Comparison Examples.

(A) Adhesive component: Copolymer of approximately 800,000 mass-average molecular weight with glass-transition temperature at -28°C that is generated by copolymerizing 55 parts by mass of acrylic acid butyl ester, 10 parts by mass of methacrylic acid, 20 parts by mass of methacrylic acid glycidyl ester, and 15 parts by mass of 2-hydroxyethyl acrylate.

...

B. Finding

According to the aforementioned statement, it is found that the details of Cited Invention 3 and common features and differences between the Invention and Cited Invention 3 are as recognized by the Decision (No. 2, 3. (2) C. above) (however, whether Difference 7 is a substantive difference or not is not to be determined here).

(2) The ease of conceiving of Difference 6

A. Examination

(A) Concerning Difference 6, when deeming the total amount of monomers that constitute (meth)acrylic acid ester copolymer as 100% by mass, the values of composition amount

'b' of Component b and composition amount 'c' of Component c are " $10 \leq b+40c \leq 26$ ($0.05 \leq c \leq 0.45$)" in the Invention, while 'c' is 20 and 'b+40c' is 810 in Cited Invention 3.

Then, whether a person skilled in the art could have easily conceived of changing the values of 'b' and 'c' above in Cited Invention 3 to adjust them within the range of values in the Invention or not is examined below.

(B) First, as mentioned in (1) A. (A) and (B) above, Cited Invention 3 is an invention of a bonding adhesive sheet that is also used as a dicing die bond; it aims to reduce damage to bonding wires that are generated at stacking and resolve variations in the height of semiconductor devices that are attributable to defective accuracy in the thickness of the adhesive layer that bonds semiconductor chips, variations in the height from the substrate to the surface of semiconductor chips on the top layer, and the tilt of semiconductor chips on the top layer, etc.

Based on the above, for the Invention, which is an invention of a compound for an adhesive composition that is used for an adhesive layer of a decorative sheet, and Cited Invention 3, the technological field and the problem to be solved by the invention are not necessarily the same and therefore there was little motivation to add improvement to Cited Invention 3 to solve the problem of the Invention in the first place.

(C) As mentioned in No. 2, 3. (2) C. above, Cited Invention 3 is a (meth)acrylic acid ester copolymer copolymerizing 55 parts by mass of acrylic acid butyl ester (Component a), 10 parts by mass of methacrylic acid (Component b), 20 parts by mass of methacrylic acid glycidyl ester (Component c), and 15 parts by mass of 2-hydroxyethyl acrylate (Component d). In order to achieve the composition of the Invention related to Difference 6, the composition amount of methacrylic acid glycidyl ester, which is 20% by mass, needs to be reduced to 1/40 or lower to 0.45% by mass or less.

However, as mentioned in (1) A. (C) above, in Exhibit Ko 9 Document, the content rate of component units induced by (meth)acrylic acid glycidyl ester in copolymers is usually 0 to 80% by mass, or preferably 5 to 50% by mass (paragraph [0035]). Therefore, the change in the composition amount as mentioned above requires adjusting monomers containing glycidyl groups to 1/10 or lower of 5% by mass, which is the lower limit of the preferable composition amount. In addition, in Exhibit Ko 9 Document, there are no statements focused on monomers containing glycidyl groups or statements related to specific effects, etc. achieved by reducing the composition amount to 1/40 or lower, or examples of syntheses where the content amount of (meth)acrylic acid glycidyl ester is set around 0% by mass.

Based on the above, in Cited Invention 3, in order to adjust the composition amount of glycidyl methacrylate within the range of values in the Invention, it is necessary to

focus only on (meth)acrylic acid glycidyl ester of Component c from among the monomers of Component a through Component d and to adjust the composition amount to 1/10 or lower of 5% by mass, which is the lower limit of the preferable range. However, even examining Exhibit Ko 9 Document, no technical reasons are found to conduct such adjustment.

(D) As mentioned above, for the Invention and Cited Invention 3, the technological field and the problem to be solved by the invention are not necessarily the same and therefore there was little motivation to add an improvement to Cited Invention 3 to solve the problem of the Invention in the first place. In addition, there are no technical reasons for a person skilled in the art to focus only on glycidyl methacrylate and to adjust its composition amount to be 1/10 or lower than the lower limit of the preferable range. Based on these facts, it cannot be said that a person skilled in the art who came across Exhibit Ko 9 Reference had motivation to conceive of the composition of the Invention related to Difference 6.

Consequently, it cannot be said that a person skilled in the art could have easily conceived of changing the values of composition amount 'b' of Compound b and composition amount 'c' of Compound c in Cited Invention 3 to adjust them within the range of values in the Invention.

B. Allegation of the Defendant

(A) The Defendant alleged that since glycidyl methacrylate compatibilizes epoxy resin, if the content amount of epoxy resin is small, the content amount of glycidyl methacrylate can be small.

However, as mentioned in (1) A. (C) above, concerning the purpose of introduction of glycidyl groups, Exhibit Ko 9 Document states not only to increase compatibility with epoxy resin, but also to increase heat-resistance by increasing T_g (glass-transition temperature) after thermosetting. Based on that fact, it cannot necessarily be said that in Cited Invention 3, if the content amount of epoxy resin is small, the content amount of glycidyl methacrylate can be small, and if it is objectively possible to reduce the content amount of glycidyl methacrylate, technical reasons for reducing its content amount drastically cannot be found as mentioned above. Therefore, the allegation of the Defendant is in hindsight.

Therefore, the aforementioned allegation of the Defendant is groundless.

(B) The Defendant made various other allegations; however, in light of the examinations above, all of the allegations are groundless.

(3) Grounds for Rescission 3

Based on the examination above, regarding Cited Invention 3, it cannot be said that a

person skilled in the art could have easily conceived of the composition of the Invention related to Difference 6 at the time of the filing of the Application and therefore it should be said that Grounds for Rescission 3 are well-founded, without need to make a determination concerning Difference 7.

6. Conclusion

Based on the above, there are errors in the Decision that determined that the Invention could have been easily made by a person skilled in the art based on Cited Invention 1 through Cited Invention 3 and that the patent cannot be granted pursuant to the provisions of Article 29, paragraph (2) of the Patent Act.

Consequently, the claim of the Plaintiff has grounds and therefore it is upheld, and the judgment is rendered as indicated in the main text.

Intellectual Property High Court, Third Division

Presiding judge: TSURUOKA Toshihiko

Judge: NAKADAIRA Ken

Judge: TSUNO Michinori

(Attachment) Table 1-1 of the Description

Table 1-1

		Example 1	Reference Example 6	Example 3	Example 4	Example 5	Example 6	Example 7	Example 8	Example 9	Example 10	Example 11	Example 12
(A)	(A-a) Acrylic acid butyl ester	31.15	31.25	31.10	31.25	31.00	31.35	27.65	27.80	32.75	34.65	34.55	34.75
	(A-a) 2 -ethylhexyl acrylate	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
	(A-b) Acrylic acid	8.50	8.50	8.50	8.50	8.50	8.50	12.00	12.00	7.00	5.00	5.00	5.00
	(A-c) Glycidyl methacrylate	0.25	0.25	0.30	0.15	0.40	0.05	0.25	0.10	0.15	0.25	0.35	0.15
	(A-d) Methacrylic acid 2 -hydroxyethyl ester	0.10		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Value of (b+40c)	18.5	18.5	20.5	14.5	24.5	10.5	22.0	16.0	13.0	15.0	19.0	11.0
	Mass-average molecular weight	500,000	500,000	490,000	480,000	470,000	460,000	510,000	490,000	470,000	500,000	480,000	480,000
	Glass-transition temperature (calculation value)	-56.2	-56.3	-56.2	-56.3	-56.1	-56.4	-53.0	-53.1	-57.6	-59.4	-59.3	-59.4
(B)	Coronate L-55E	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Amount of isocyanate groups	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
(C)	CR900	30	30	30	30	30	30	30	30	30	30	30	30
Evaluation results	Maximum heat release rate	○	○	○	○	○	○	○	○	○	○	○	○
	Time exceeding 200KW	○	○	○	○	○	○	○	○	○	○	○	○
	Total heating value	○	○	○	○	○	○	○	○	○	○	○	○
	Tackiness	○	○	○	○	△	○	○	○	○	○	○	○
	Workability	○	○	○	○	△	○	○	○	○	○	○	○
	Heat-resistance	○	△	○	○	○	△	○	○	○	○	○	△
	Adhesion	○	○	○	○	○	○	○	○	○	○	○	○

(Attachment) Table 1-2 of the Description

Table 1-2

		Example 13	Example 14	Example 15	Example 16	Example 17	Comparison example 1	Comparison example 2	Comparison example 3	Comparison example 4	Comparison example 5	Comparison example 6	Comparison example 7	Comparison example 8	Comparison example 9
(A)	(A-a) Acrylic acid butyl ester	25.65	25.85	35.65	35.45	28.55	31.40	31.50	30.90	39.65	24.15	34.80	34.40	29.45	27.50
	(A-a) 2-ethylhexyl acrylate	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
	(A-b) Acrylic acid	14.00	14.00	4.00	4.00	11.00	8.50	8.50	8.50		15.50	5.00	5.00	10.00	12.00
	(A-c) Glycidyl methacrylate	0.25	0.05	0.25	0.45	0.35			0.50	0.25	0.25	0.10	0.50	0.45	0.40
	(A-d) Methacrylic acid 2-hydroxyethyl ester	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Value of (b+40c)	24.0	16.0	14.0	22.0	25.0	8.5	8.5	28.5	10.0	25.5	9.0	25.0	28.0	28.0
	Mass-average molecular weight	490,000	510,000	530,000	480,000	470,000	470,000	500,000	460,000	480,000	520,000	460,000	500,000	470,000	470,000
	Glass-transition temperature (calculation value)	-51.1	-51.3	-60.2	-60.1	-53.9	-56.4	-56.3	-56.1	-63.7	-49.7	-56.3	-56.3	-53.1	-52.5
(B)	Coronate L-55E	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Amount of isocyanate groups	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
(C)	CR900	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Evaluation results	Maximum heat release rate	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Time exceeding 200KW	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Total heating value	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Tackiness	○	○	○	△	△	○	○	△	△	○	○	△	△	△
	Workability	△	△	○	△	△	○	○	×	△	×	○	×	×	×
	Heat-resistance	○	○	△	○	○	×	×	○	×	○	×	○	○	○
	Adhesion	○	○	△	○	○	○	○	○	×	○	△	○	○	○

(Attachment) Table 2 of the Description

Table 2

		Example 1	Example 18	Example 19	Example 20	Example 21	<u>Reference Example 7</u>	<u>Reference Example 8</u>
(A)	(A-a) Acrylic acid butyl ester	31.15	31.15	31.15	31.15	31.15	31.15	31.15
	(A-a) 2-Ethylhexyl acrylate	60.00	60.00	60.00	60.00	60.00	60.00	60.00
	(A-b) Acrylic acid	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	(A-c) Glycidyl methacrylate	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	(A-d) Methacrylic acid 2-hydroxyethyl ester	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Value of (b+40c)	18.5	18.5	18.5	18.5	18.5	18.5	18.5
	Mass-average molecular weight	500,000	500,000	500,000	500,000	500,000	500,000	500,000
	Glass-transition temperature (calculation value)	-56.2	-56.2	-56.2	-56.2	-56.2	-56.2	-56.2
(B)	Coronate L-55E	2.2	2.7	1.8	1.5	3.6	0.5	4.4
	Amount of isocyanate groups	0.21	0.26	0.18	0.14	0.35	0.05	0.42
(C)	CR900	30	30	30	30	30	30	30
Evaluation results	Maximum heat release rate	○	○	○	○	○	○	○
	Time exceeding 200KW	○	○	○	○	○	○	○
	Total heating value	○	○	○	○	○	○	○
	Tackiness	○	○	○	○	△	○	△
	Workability	○	○	○	○	△	△	×
	Heat-resistance	○	○	○	△	○	×	○
	Adhesion	○	○	○	○	○	○	○