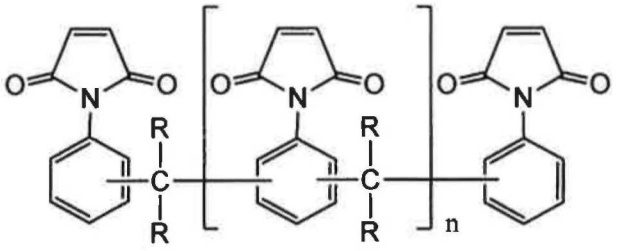
Claims

[Claim 1]

A resin composition comprising:

a maleimide compound (A) represented by general formula (1):

[Formula 1]



----- (1)

wherein R represents a hydrogen atom or a methyl group, and n represents an integer of 1 to 10 on average;

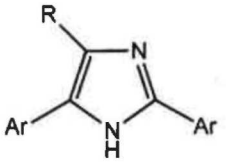
a cyanate ester compound (B);

a non-halogen epoxy resin (C);

an inorganic filler (D); and

an imidazole compound (F) represented by general formula (3):

[Formula 2]



----- (3)

wherein Ar is a phenyl group, a naphthalene group, a biphenyl group, an anthracene group, or a hydroxyl group modified substance thereof, and R is a hydrogen atom, an alkyl group, an aryl group, or a hydroxyl group modified substance thereof.

[Claim 2]

The resin composition according to claim 1, wherein a content of the maleimide compound (A) is 10 to 50 parts by mass based on 100 parts by mass in total of the maleimide compound (A), the cyanate ester compound (B), and the non-halogen epoxy resin (C).

[Claim 3]

The resin composition according to claim 1 or 2, wherein a content of the cyanate ester compound (B) is 10 to 50 parts by mass based on 100 parts by mass in total of the maleimide compound (A), the cyanate ester compound (B), and the non-halogen epoxy resin (C).

[Claim 4]

The resin composition according to any one of claims 1 to 3, wherein a content of the non-halogen epoxy resin (C) is 5 to 50 parts by mass based on 100 parts by mass in total of the maleimide compound (A), the cyanate ester compound (B), and the non-halogen epoxy resin (C).

[Claim 5]

The resin composition according to any one of claims 1 to 4, wherein a content of the inorganic filler (D) is 50 to 400 parts by mass based on 100 parts by mass in total of the maleimide compound (A), the cyanate ester compound (B), and the non-halogen epoxy resin (C).

[Claim 6]

The resin composition according to any one of claims 1 to 5, wherein a content of the imidazole compound (F) is 0.01 to 10 parts by mass based on 100 parts

by mass in total of the maleimide compound (A), the cyanate ester compound (B), and the non-halogen epoxy resin (C).

[Claim 7]

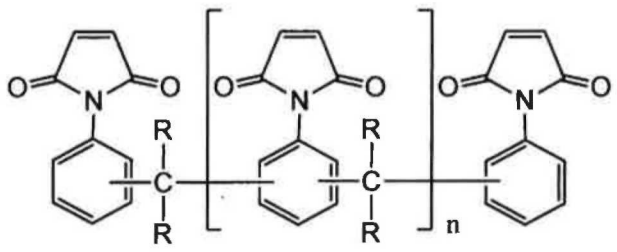
A resin composition comprising:

a non-halogen epoxy resin (C);

an inorganic filler (D);

a BT resin (E) obtained by prepolymerizing a maleimide compound (A) and a cyanate ester compound (B), the maleimide compound (A) represented by general formula (1):

[Formula 3]

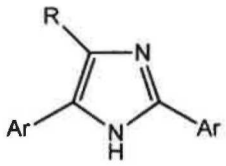


----- (1)

wherein R represents a hydrogen atom or a methyl group, and n represents an integer of 1 to 10 on average; and

an imidazole compound (F) represented by general formula (3):

[Formula 4]



----- (3)

wherein Ar is a phenyl group, a naphthalene group, a biphenyl group, an anthracene group, or a hydroxyl group modified substance thereof, and R is a hydrogen atom, an alkyl group, an aryl group, or a hydroxyl group modified substance thereof.

[Claim 8]

The resin composition according to claim 7, wherein a content of the non-halogen epoxy resin (C) is 5 to 50 parts by mass based on 100 parts by mass in total of the non-halogen epoxy resin (C) and the BT resin (E).

[Claim 9]

The resin composition according to claims 7 or 8, wherein a content of the inorganic filler (D) is 50 to 400 parts by mass based on 100 parts by mass in total of the non-halogen epoxy resin (C) and the BT resin (E).

[Claim 10]

The resin composition according to any one of claims 7 to 9, wherein a content of the BT resin (E) is 20 to 80 parts by mass based on 100 parts by mass in total of the non-halogen epoxy resin (C) and the BT resin (E).

[Claim 11]

The resin composition according to any one of claims 7 to 10, wherein a content of the maleimide compound (A) is 5 to 75 parts by mass based on 100 parts by mass of the BT resin (E) when the BT resin (E) is produced.

[Claim 12]

The resin composition according to any one of claims 7 to 11, wherein a content of the imidazole compound (F) is 0.01 to 10 parts by mass based on 100 parts by mass in total of the non-halogen epoxy resin (C) and the BT resin (E).

[Claim 13]

The resin composition according to any one of claims 1 to 12, wherein the imidazole compound (F) is 2,4,5-triphenyl imidazole.

[Claim 14]

The resin composition according to any one of claims 1 to 13, wherein the inorganic filler (D) is at least one selected from the group consisting of silica, boehmite, magnesium hydroxide, alumina, and talc.

[Claim 15]

The resin composition according to any one of claims 1 to 14, wherein the inorganic filler (D) is the boehmite and/or the silica.

[Claim 16]

The resin composition according to any one of claims 1 to 15, wherein the non-halogen epoxy resin (C) is at least one selected from the group consisting of a phenol biphenyl aralkyl-based epoxy resin, a phenol novolac-based epoxy resin, a cresol novolac-based epoxy resin, a polyoxynaphthylene-based epoxy resin, a tetrafunctional naphthalene-based epoxy resin, and an anthracene-based epoxy resin.

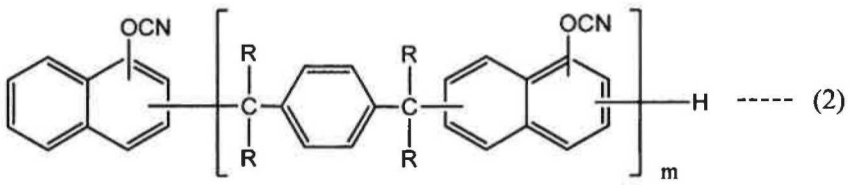
[Claim 17]

The resin composition according to any one of claims 1 to 16, wherein the cyanate ester compound (B) is a naphthol aralkyl-based cyanate ester compound and/or a novolac-based cyanate ester compound.

[Claim 18]

The resin composition according to any one of claims 1 to 17, wherein the cyanate ester compound (B) is a naphthol aralkyl-based cyanate ester compound represented by general formula (2):

[Formula 5]



----- (2)

wherein R represents a hydrogen atom or a methyl group, and m represents an integer of 1 to 10 on average.

[Claim 19]

The resin composition according to any one of claims 1 to 18 used for a cured product having a glass transition temperature of 260 to 360°C.

[Claim 20]

A cured product comprising a resin composition according to any one of claims 1 to 19.

[Claim 21]

A prepreg comprising:

a base material; and

a resin composition according to any one of claims 1 to 19 impregnated into or coated on the base material.

[Claim 22]

A laminate obtained by laminate-molding a prepreg according to claim 21.

[Claim 23]

A metal foil-clad laminate obtained by laminate-molding a prepreg according to claim 21 and a metal foil.

[Claim 24]

A laminate obtained by laminating a prepreg according to claim 21, and curing the prepreg at a temperature of 100 to 300°C for 0.05 to 5 hours.

[Claim 25]

A metal foil-clad laminate obtained by laminating a prepreg according to claim 21 and a metal foil, and curing the prepreg and the metal foil at a temperature of 100 to 300°C for 0.05 to 5 hours.

[Claim 26]

A method for producing a laminate comprising the steps of:

laminating a prepreg according to claim 21; and

heating the prepreg at a temperature of 100 to 300°C for 0.05 to 5 hours.

[Claim 27]

A method for producing a metal foil-clad laminate comprising the steps of:

laminating a prepreg according to claim 21 and a metal foil; and

heating the prepreg and the metal foil at a temperature of 100 to 300°C for 0.05 to 5 hours.