Claims

[Claim 1] A curable resin composition, comprising:

an epoxy resin (A);

a polyhydric carboxylic acid (B); and

at least either one of a zinc salt and a zinc complex (C) as essential components, provided that the polyhydric carboxylic acid (B) and the at least either one of the zinc salt and the zinc complex (C) satisfy the following requirements respectively:

Polyhydric carboxylic acid (B): a polyhydric carboxylic acid having at least two carboxyl groups and having a siloxane skeleton as a main skeleton; and

At least either one of zinc salt and zinc complex (C): at least either one of a zinc carboxylate, a zinc salt of a phosphate ester or phosphoric acid and a zinc complex having a carboxylic acid, a phosphate ester or a phosphoric acid as a ligand.

[Claim 2] The curable resin composition according to claim 1,

wherein the polyhydric carboxylic acid (B) has a linear polysiloxane structure and has carboxylic acids at both terminals.

[Claim 3] The curable resin composition according to claim 1 or 2,

wherein the polyhydric carboxylic acid (B) is a compound obtained by a reaction of a carbinol-modified compound having a linear polysiloxane structure with a cyclic saturated aliphatic acid anhydride.

[Claim 4] The curable resin composition according to any one of claims 1 to 3, comprising:

a hindered amine-based photo-stabilizer; and

a phosphorus-containing antioxidant.

[Claim 5] The curable resin composition according to any one of claims 1 to 4,

wherein the at least either one of the zinc salt and the zinc complex (C) is at least either one of the zinc salt of the phosphate ester and the zinc complex of the phosphate ester.

[Claim 6] A cured product, which is obtained by curing the curable resin composition according to any one of claims 1 to 5.

[Claim 7] A method of producing a cured product, comprising:

curing the curable resin composition according to any one of claims 1 to 5.

[Claim 8] An optical material, comprising:

an optical part; and

the cured product according to claim 6.

Claims

[Claim 1] A curable resin composition, comprising:

an epoxy resin (A);

a polyhydric carboxylic acid (B); and

at least either one of a zinc salt and a zinc complex (C) as essential components, provided that the polyhydric carboxylic acid (B) and the at least either one of the zinc salt and the zinc complex (C) satisfy the following requirements respectively:

Polyhydric carboxylic acid (B): a polyhydric carboxylic acid having at least two carboxyl groups, having a siloxane skeleton as a main skeleton and being produced by reaction of a silicone compound (f) with methylhexahydrophthalic anhydride; and

At least either one of zinc salt and zinc complex (C): at least either one of a zinc carboxylate, a zinc salt of a phosphate ester or phosphoric acid and a zinc complex having a carboxylic acid, a phosphate ester or a phosphoric acid as a ligand.

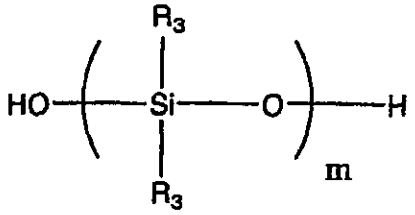
[Claim 2] The curable resin composition according to claim 1,

wherein the epoxy resin (A) is a block-type siloxane compound that is produced by reacting an alkoxysilane compound (a) represented by the following general formula (1) and a silicone oil (b) represented by the following general formula (2), and performing hydrolytic condensation between alkoxy groups of the alkoxysilane compound (a), or

a block-type siloxane compound that is produced by reacting an alkoxysilane compound (a) represented by the following general formula (1), a silicone oil (b) represented by the following general formula (2) and an alkoxysilane compound (c) represented by the following general formula (3), and performing hydrolytic condensation between alkoxy groups of the alkoxysilane compound (a) and the alkoxysilane compound (c):

$$XSi(OR_2)_3 \quad (1)$$

wherein X represents an organic group having an epoxy group; and a plurality of R_2 groups present in the general formula (1) may be the same or different from each other and represent a linear, branched or cyclic alkyl group having 1 to 10 carbon atoms;



(2)

wherein a plurality of R_3 groups present may be the same or different from each other and represent an alkyl group having 1 to 10 carbon atoms, an aryl group having 6 to

14 carbon atoms, or an alkenyl group having 2 to 10 carbon atoms; and m represents 3 to 200 as an average value; and

$R_4Si(OR_5)_3$ (3)

wherein R_4 represents a methyl group or a phenyl group; a plurality of R_5 groups present in the general formula (3) may be the same or different from each other and represent each a linear, branched or cyclic alkyl group having 1 to 10 carbon atoms.

[Claim 3] The curable resin composition according to claim 1 or 2, wherein the polyhydric carboxylic acid (B) has a linear polysiloxane structure and has carboxylic acids at both terminals.

[Claim 4] The curable resin composition according to any one of claims 1 to 3, wherein the silicone compound (f) is a carbinol-modified compound having a linear polysiloxane structure.

[Claim 5] The curable resin composition according to any one of claims 1 to 4, further comprising:

a hindered amine-based photo-stabilizer; and

a phosphorus-containing antioxidant.

[Claim 6] The curable resin composition according to any one of claims 1 to 5, wherein the at least either one of the zinc salt and the zinc complex (C) is at least either one of the zinc salt of the phosphate ester and the zinc complex of the phosphate ester.

[Claim 7] A cured product, which is obtained by curing the curable resin composition according to any one of claims 1 to 6.

[Claim 8] A method of producing a cured product, comprising:

curing the curable resin composition according to any one of claims 1 to 6.

[Claim 9] An optical material, comprising:

an optical part; and

the cured product according to claim 7.