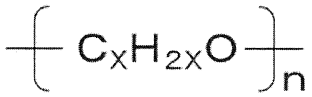
Claims

[Claim 1]

An adhesive composition containing an organic-solvent-soluble polyimide (A), an epoxy resin (B) and a thermally conductive filler (C), an organic-solvent-soluble polyimide (A) containing a structure represented by the following general formula (1) as a component derived from a diamine, and the content of a thermally conductive filler (C) in the adhesive composition being not less than 60% by volume, ~~and wherein the thermally conductive filler (C) includes a filler that the pH of the liquid prepared when 10 g of the thermally conductive filler is added to 100 g of water is not more than 6.0~~ and wherein the thermally conductive filler (C) includes two or more fillers differing in the average particle diameter and contains at least a filler with an average particle diameter of 6 μm or more and 15 μm or less and a filler with an average particle diameter of 30 μm or more, the filler with an average particle diameter of 30 μm or more is aluminium nitride.

[Formula 1]



(1)

(In general formula (1), X represents an integer of 1 to 10 inclusive and n represents an integer of 1 to 20 inclusive.)

~~[Claim 2]~~

~~The adhesive composition according to claim 1, wherein the thermally conductive filler (C) includes two or more fillers differing in the average particle diameter and at least one filler has an average particle diameter of 6 μm or more.~~

~~[Claim 3]~~

~~The adhesive composition according to claim 1 or 2, wherein the thermally conductive filler (C) includes two or more fillers differing in the average particle diameter and contains at least a filler with an average particle diameter of 6 μm or more and 15 μm or less and a filler with an average particle diameter of 30 μm or more.~~

[Claim 2]

The adhesive composition according to claim 1, wherein the thermally conductive filler (C) includes a filler that the pH of the liquid prepared when 10 g of the thermally conductive filler is added to 100 g of water is not more than 6.0.

[Claim ~~4~~3]

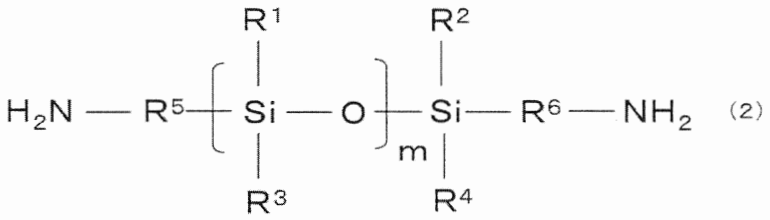
The adhesive composition according to ~~any one of~~ claim~~s~~ 1 or~~to~~ 2~~3~~, wherein the thermally conductive filler (C) includes alumina.

[Claim ~~5~~4]

The adhesive composition according to any one of claims 1 to ~~4~~3, wherein the organic-solvent-soluble polyimide (A) has a residue of a diamine represented by the following general

formula (2).

[Formula 2]

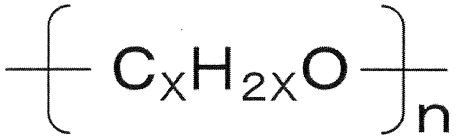


(In the general formula (2), m represents an integer of 1 to 30. Moreover, R^5 and R^6 may be the same or different and represent an alkylene group with 1 to 30 carbon atoms or a phenylene group. R^1 to R^4 each may be the same or different and represent an alkyl group with 1 to 30 carbon atoms, a phenyl group or a phenoxy group.)

[Claim ~~65~~]

An adhesive sheet containing an organic-solvent-soluble polyimide (A), an epoxy resin (B) and a thermally conductive filler (C), an organic-solvent-soluble polyimide (A) containing a structure represented by the following general formula (1) as a component derived from a diamine, and the content of a thermally conductive filler (C) in the sheet being not less than 60% by volume, ~~and wherein the thermally conductive filler (C) includes a filler that the pH measured when 10 g of the thermally conductive filler is added to 100 g of water is not more than 6.0~~ and wherein the thermally conductive filler (C) includes two or more fillers differing in the average particle diameter and contains at least a filler with an average particle diameter of 6 μm or more and 15 μm or less and a filler with an average particle diameter of 30 μm or more, the filler with an average particle diameter of 30 μm or more is aluminium nitride.

[Formula 3]



(1)

(In general formula (1), X represents an integer of 1 to 10 inclusive and n represents an integer of 1 to 20 inclusive.)

~~[Claim 7]~~

~~The adhesive sheet according to claim 6, wherein the thermally conductive filler (C) includes two or more fillers differing in the average particle diameter and at least one filler has an average particle diameter of 6 μm or more.~~

~~[Claim 8]~~

~~The adhesive sheet according to claim 6 or 7, wherein the thermally conductive filler (C) includes two or more fillers differing in the average particle diameter and contains at least a filler with an average particle diameter of 6 μm or more and 15 μm or less and a filler with an average particle diameter of 30 μm or more.~~

[Claim 6]

The adhesive sheet according to claim 5, wherein the thermally conductive filler (C) includes a filler that the pH measured when 10 g of the thermally conductive filler is added to 100 g of water is not more than 6.0.

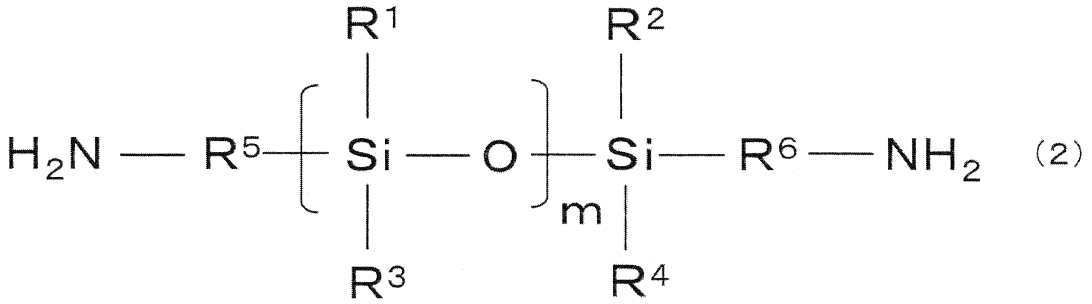
[Claim ~~9~~7]

The adhesive sheet according to ~~any one of~~ claim~~s~~ ~~5~~6 ~~or to~~ ~~6~~8, wherein the thermally conductive filler (C) includes alumina.

[Claim ~~10~~8]

The adhesive sheet according to any one of claims ~~6~~5 to ~~9~~7, wherein the organic-solvent-soluble polyimide (A) has a residue of a diamine represented by the following general formula (2).

[Formula 4]



(2)

(In the general formula (2), m represents an integer of 1 to 30. Moreover, R^5 and R^6 may be the same or different and represent an alkylene group with 1 to 30 carbon atoms or a phenylene group. R^1 to R^4 each may be the same or different and represent an alkyl

group with 1 to 30 carbon atoms, a phenyl group or a phenoxy group.)

[Claim 9~~11~~]

A cured product of an adhesive composition according to any one of claims 1 to 5 or of an adhesive sheet according to any one of claims 5~~6~~ to 8~~10~~.

[Claim 10~~12~~]

A semiconductor device comprising a cured product of an adhesive composition according to any one of claims 1 to ~~5~~4 or of an adhesive sheet according to any one of claims ~~6~~5 to 8~~10~~.