WHAT IS CLAIMED IS:

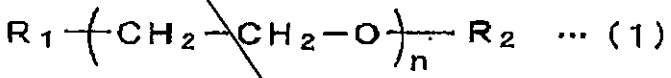
1. An epoxy resin composition for semiconductor encapsulation, comprising the following components (A) to (E), wherein the component (D) is contained in an amount of from 0.1 to 1.5% by weight of the whole of the epoxy resin composition:

(A) an epoxy resin;

(B) a phenol resin;

(C) an inorganic filler;

(D) a compound represented by the following formula (1):



$$R_1-\left(CH_2-CH_2-O\right)_n-R_2 \quad \cdots (1)$$

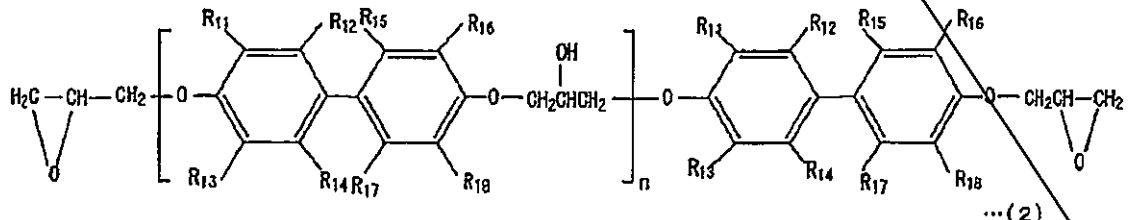
in which R_1 represents a hydroxyl group or an alkoxy group, R_2 represents a hydrogen atom or a monovalent hydrocarbon group, and n is an integer of from 1 to 7; and

(E) a release agent comprising at least one of the following (α) and (β):

(α) a linear saturated carboxylic acid having a number average molecular weight of from 550 to 800, and

(β) an oxidized polyethylene wax.

2. The epoxy resin composition for semiconductor encapsulation according to claim 1, wherein the epoxy resin as the component (A) is an epoxy resin having a biphenyl group, represented by the following formula (2):



in which R_{11} to R_{18} which may be the same or different from each other represent hydrogen atom or a substituted or unsubstituted monovalent hydrocarbon group having from 1 to 10 carbon atoms, and n is an integer of from 0 to 3.

3. The epoxy resin composition for semiconductor encapsulation according to claim 1 or 2, wherein the component (D) is contained in an amount of from 0.4 to 1.5% by weight of the whole of the epoxy resin composition.

4. The epoxy resin composition for semiconductor encapsulation according to any one of claims 1 to 3, wherein the component (E) is contained in an amount of from 0.05 to 2.0% by weight of the whole of the epoxy resin composition.

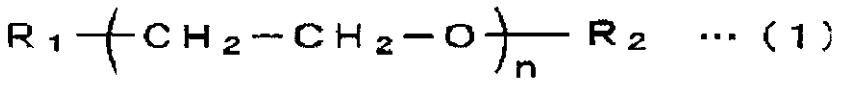
5. The epoxy resin composition for semiconductor encapsulation according to any one of claims 1 to 4, wherein the release agent as the component (E) is the linear saturated carboxylic acid (α) having a number average molecular weight of from 550 to 800.

6. A semiconductor device comprising a semiconductor element encapsulated with the epoxy resin composition for semiconductor encapsulation according to any one of claims 1 to 5.

What is claimed is:

1. An epoxy resin composition for semiconductor encapsulation, comprising the following components (A) to (E), wherein the component (D) is contained in an amount of from 0.1 to 1.5% by weight of the whole of the epoxy resin composition:

(A) an epoxy resin;
(B) a phenol resin;
(C) an inorganic filler;
(D) a compound represented by the following formula (1):

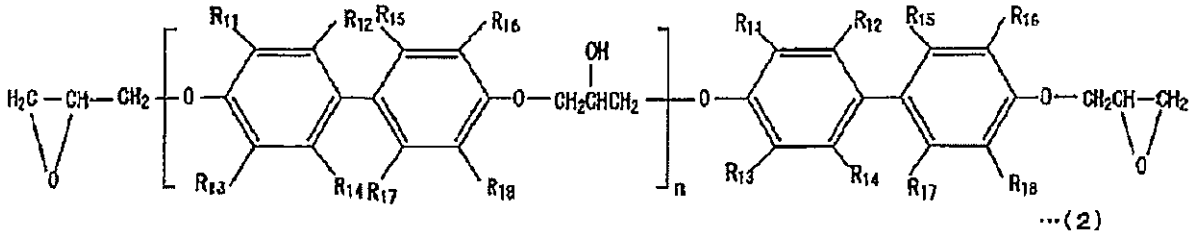


$$R_1-\left(CH_2-CH_2-O\right)_n-R_2 \quad \cdots (1)$$

in which R_1 represents an alkoxy group having from 1 to 5 carbon atoms, R_2 represents a hydrogen atom or a monovalent hydrocarbon group, and n is an integer of from 1 to 7; and

(E) a release agent comprising at least one of the following (α) and (β):
(α) a linear saturated carboxylic acid having a number average molecular weight of from 550 to 800, and
(β) an oxidized polyethylene wax.

2. The epoxy resin composition for semiconductor encapsulation according to claim 1, wherein the epoxy resin as the component (A) is an epoxy resin having a biphenyl group, represented by the following formula (2):



···(2)

in which R_{11} to R_{18} which may be the same or different from each other represent hydrogen atom or a substituted or unsubstituted monovalent hydrocarbon group having from 1 to 10 carbon atoms, and n is an integer of from 0 to 3.

3. The epoxy resin composition for semiconductor encapsulation according to claim 1 or 2, wherein the component (D) is contained in an amount of from 0.4 to 1.5% by weight of the whole of the epoxy resin composition.

4. The epoxy resin composition for semiconductor encapsulation according to any one of claims 1 to 3, wherein the component (E) is contained in an amount of from 0.05 to 2.0% by weight of the whole of the epoxy resin composition.

5. The epoxy resin composition for semiconductor encapsulation according to any one of claims 1 to 4, wherein the release agent as the component (E) is the linear saturated carboxylic acid (α) having a number average molecular weight of from 550 to 800.

6. A semiconductor device comprising a semiconductor element encapsulated with the epoxy resin composition for semiconductor encapsulation according to any one of claims 1 to 5.