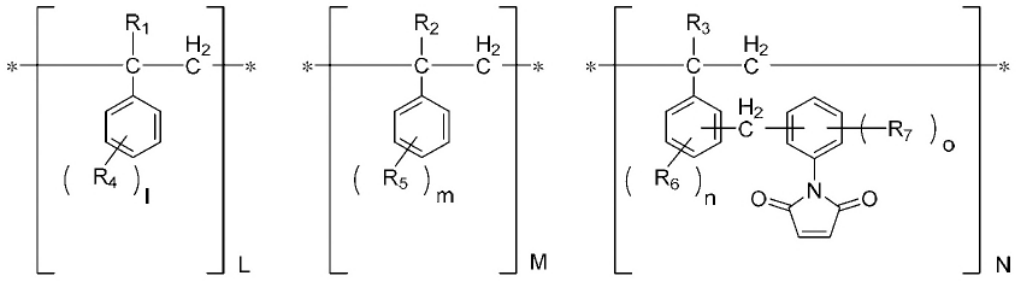
Claims

1. A maleimide resin having repeating units of the following formulae (a), (b), and (c):



(a) (b) (c)

in the above formulae,

R_1 is a methyl group, R_2 is a hydrogen atom, and R_3 is a methyl group or a hydrogen atom;

R_4 to R_7 represent a hydrogen atom, a hydrocarbon group having 1 to 10 carbon atoms, or a halogenated alkyl group;

"l" and "m" each represent a real number of 0 to 5;

"n" and "o" represent a real number of 0 to 4;

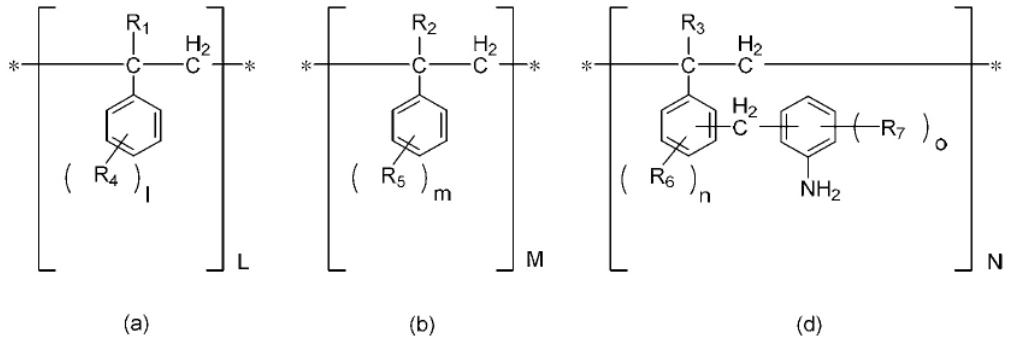
each of L and M independently represents a real number of 0 to 20;

N represents a real number of 1 to 20;

(a), (b), and (c) are joined by *, respectively; and

the repeating positions may be random.

2. A maleimide resin obtained by a reaction of an amine resin having repeating units of the following formula (a), (b), and (d) with maleic acid or maleic anhydride:



(a) (b) (d)

in the above formulae,

R_1 is a methyl group, R_2 is a hydrogen atom, and R_3 is a methyl group or a hydrogen atom;

R_4 to R_7 represent a hydrogen atom, a hydrocarbon group having 1 to 10 carbon atoms, or a halogenated alkyl group;

"l" and "m" each represent a real number of 0 to 5;

"n" and "o" represent a real number of 0 to 4;

each of L and M independently represents a real number of 0 to 20;

N represents a real number of 1 to 20; and

(a), (b), and (d) are joined by *, respectively, and the repeating positions may be random.

3. A curable resin composition containing the maleimide resin according to claim 1 or 2.

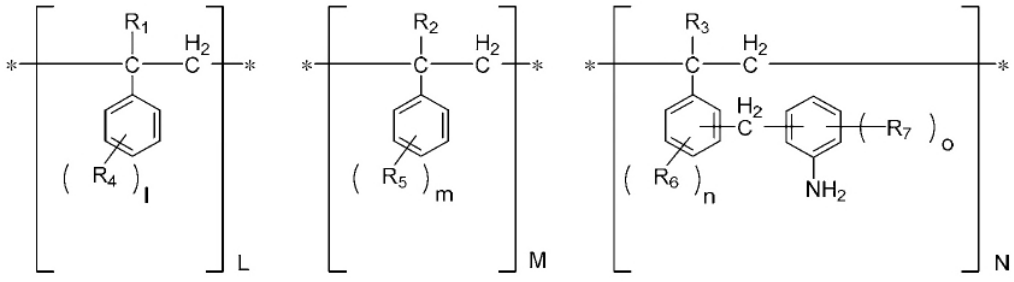
4. The curable resin composition according to claim 3, further comprising a curable resin other than the maleimide resin.

5. The curable resin composition according to claim 3, further comprising a curing accelerator.

6. A cured product obtained by curing the maleimide resin according to claim 1 or 2.

7. A cured product obtained by curing the curable resin composition according to claim 3.

8. An amine resin having repeating units of the following formula (a), (b), and (d):



(a) (b) (d)

in formulae (a), (b), and (d),

R_1 is a methyl group, R_2 is a hydrogen atom, and R_3 is a methyl group or a hydrogen atom;

R_4 to R_7 represent a hydrogen atom, a hydrocarbon group having 1 to 10 carbon atoms, or a halogenated alkyl group;

"l" and "m" each represent a real number of 0 to 5;

"n" and "o" represent a real number of 0 to 4;

each of L and M independently represents a real number of 0 to 20;

N represents a real number of 1 to 20;

(a), (b), and (d) are joined by *, respectively; and

the repeating positions may be random.