CLAIMS

WHAT IS CLAIMED IS:

1. A chemically-amplified positive photosensitive resin composition, comprising:

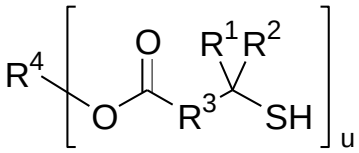
a resin (A), wherein the resin (A) is obtained by a copolymerization of a monomer mixture and contains an acid-dissociated protecting group;

a novolac resin (B) obtained by a polycondensation of a cresol aromatic hydroxyl compound and an aldehyde compound, and based on an integral area of 100% of a molecular weight of the novolac resin (B) measured by gel permeation chromatography, a cresol binuclear area of the novolac resin (B) is between 0.5% and 6%;

a photoacid generator (C); and

a solvent (D); and

a thiol compound (E), wherein the thiol compound (E) has a structure represented by formula (E-1) below:

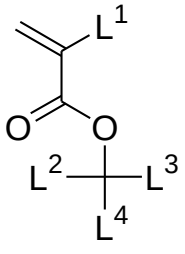


formula (E-1)

in formula (E-1), R^1 and R^2 each independently represent a hydrogen atom or a C_1 to C_4 alkyl group, R^3 represents a single bond or a C_1 to C_{10} alkylene group, and R^4 represents a u-valence organic group; and u represents an integer of 2 to 6,

wherein based on a total amount of 100 parts by weight of the resin (A), an amount of the thiol compound (E) is 0.3 parts by weight to 3 parts by weight.

2. The chemically-amplified positive photosensitive resin composition of claim 1, wherein the monomer mixture comprises a monomer (a1), and the monomer (a1) has a structure represented by formula (A-1) below:



formula (A-1)

in formula (A-1), L^1 represents a hydrogen atom, a C_1 to C_6 straight or branched alkyl group, a fluorine atom, or a C_1 to C_6 straight or branched fluorinated alkyl group; L^2, L^3, and L^4 respectively independently represent a C_1 to C_6 straight or branched alkyl group or a C_1 to C_6 straight or branched fluoroalkyl group, or L^3 and L^4

are bonded to each other to form a C_5 to C_{20} hydrocarbon ring.

3. The chemically-amplified positive photosensitive resin composition of claim 1, wherein the monomer mixture comprises a monomer (a2), and the monomer (a2) contains a cyclic ether group.

4. The chemically-amplified positive photosensitive resin composition of claim 1, further comprising an anthracene compound (F).

5. The chemically-amplified positive photosensitive resin composition of claim 1, wherein based on a total amount of 100 parts by weight of the resin (A), an amount of the novolac resin (B) is 20 parts by weight to 150 parts by weight, an amount of the photoacid generator (C) is 0.5 parts by weight to 5 parts by weight, and an amount of the solvent (D) is 30 parts by weight to 360 parts by weight.

6. The chemically-amplified positive photosensitive resin composition of claim 2, wherein based on a total amount of 100 parts by weight of the monomer mixture, an amount of the monomer (a1) is 10 parts by weight to 60 parts by weight.

7. The chemically-amplified positive photosensitive resin composition of claim 3, wherein based on a total amount of 100 parts by weight of the monomer mixture, an amount of the monomer (a2) is 5 parts by weight to 35 parts by weight.

8. The chemically-amplified positive photosensitive resin composition of claim 4, wherein based on a total amount of 100 parts by weight of the resin (A), an amount of the anthracene compound (F) is 0.2 parts by weight to 1.5 parts by weight.

9. A manufacturing method of a substrate with a casting mold, comprising:

a laminate step, laminating a photosensitive resin layer formed by the chemically-amplified positive photosensitive resin composition of any of claims 1 to 8 on a metal surface of a substrate;

an exposure step, irradiating the photosensitive resin layer with an actinic ray or a radiation; and

a developing step, developing the photosensitive resin layer after exposure to form a casting mold for forming an electroplated molded article.

10. A manufacturing method of an electroplated molded article, comprising:

a step of electroplating the substrate with the casting mold made by the manufacturing method of the substrate with the casting mold of claim 9 to form an electroplated molded article in the casting mold.