CLAIMS

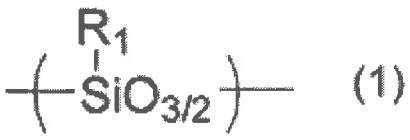
1. A composition for forming a pattern reversal film, characterized by comprising:

polysiloxane;

an additive; and

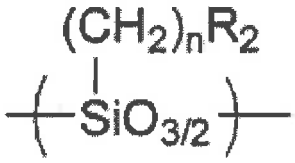
an organic solvent, wherein

the polysiloxane has a structural unit of Formula (1) and a structural unit of Formula (2):



(1)

(where $R_1$ is a $C_{1-8}$ alkyl group), and



(2)

(where $R_2$ is an acryloyloxy group or a methacryloyloxy group; and n is an integer of 2 to 4), and

the additive is an organic acid having at least two of a carboxy group and/or a hydroxy group.

~~2. The composition for forming a pattern reversal film according to claim 1,~~ wherein the additive is an organic acid selected from the group consisting of maleic acid, citric acid, salicylic acid, 3-hydroxybenzoic acid, 4-hydroxybenzoic acid, 2,6-dihydroxybenzoic acid, 3,5-dihydroxybenzoic acid, gallic acid, phthalic acid, pyromellitic acid, and ascorbic acid.

~~3~~2. The composition for forming a pattern reversal film according to claim 1 ~~or 2~~,

wherein the organic solvent is selected from $C_{2-10}$ alcohols.

43. The composition for forming a pattern reversal film according to ~~any one of~~ claims 1 ~~to 3~~or 2, characterized in that the polysiloxane contains the structural unit of Formula (1) and the structural unit of Formula (2) in a molar ratio of 50:50 to 99:1.

~~5~~4. A method for forming a reversal pattern, the method comprising:

forming a resist pattern on a substrate to be treated;

applying the composition for forming a pattern reversal film as claimed in any one of claims 1 to 43 so as to cover the pattern of the resist pattern, heating the composition at a temperature of 80°C to 180°C, and forming a pattern reversal film;

etch-backing the pattern reversal film and exposing the surface of the resist pattern; and

removing the resist pattern and forming a reversal pattern.

~~6~~5. A method for removing a pattern reversal film, the method comprising:

peeling a pattern reversal film obtained by covering a resist pattern on a substrate to be treated with the composition for forming a pattern reversal film as claimed in any one of claims 1 to 43 and by heating the ~~composition~~ composition, together with the resist pattern using an organic solvent.

~~7~~6. The method for removing a pattern reversal film according to claim ~~6~~5, wherein the organic solvent is one or two or more selected from the group consisting of propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate, ethyl lactate, and cyclohexanone.

~~8~~7. The composition for forming a pattern reversal film according to claim 1, wherein an amount of the additive in the composition is 0.1% by mass to 5% by mass with respect to the mass of the polysiloxane.