CLAIMS

1. A polymer solution comprising:

a (meth)acrylic copolymer having a constitutional unit (A3) having at least one kind of structure (III) selected from the group consisting of structures represented by the following formula (4) or (5) and a constitutional unit (B) derived from a macromonomer (b)~~; and~~

~~an organic solvent,~~

wherein ~~the~~ macromonomer (b) has ~~is a macromonomer having~~ a radically polymerizable group and two or more constitutional units represented by the following formula (b');~~,~~ and

an organic solvent, wherein

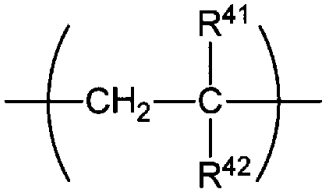
a viscosity of the polymer solution at 25°C as measured by a B-type viscometer is 5×10^4 mPa·s or less:

-COO-M-OCO · · · (4)

-COO-M-R^{32} · · · (5)

(where, M represents Zn, Cu, Mg, or Ca and R^{32} represents an organic acid residue other than a (meth)acryloyloxy group);

[Chem. ~~1~~2]



· · · (b')

~~(where, M represents Zn, Cu, Mg, or Ca and R^{32} represents an organic acid residue other than a (meth)acryloyloxy group);~~

(where, R^{41} represents a hydrogen atom, a methyl group, or CH_2OH and R^{42} represents OR^{43}, a halogen atom, COR^{44}, $COOR^{45}$, CN, $CONR^{46}R^{47}$, or R^{48}, where R^{43} to R^{47} each independently represent a hydrogen atom, an unsubstituted or substituted alkyl group, an unsubstituted or substituted alicyclic group, an unsubstituted or substituted aryl group, an unsubstituted or substituted heteroaryl group, an unsubstituted or substituted nonaromatic heterocyclic group, an unsubstituted or substituted aralkyl group, an unsubstituted or substituted alkaryl group, or an unsubstituted or substituted organosilyl group and R^{48} represents an unsubstituted or substituted aryl group or an unsubstituted or substituted heteroaryl group).

2. The polymer solution ~~(meth)acrylic copolymer~~ according to claim 1, wherein the macromonomer (b) is a macromonomer having ~~has~~ a number average molecular weight of from 500 to 50000 as determined by gel permeation chromatography (GPC) using polystyrene as a reference substance.

3. A polymer-containing composition comprising the polymer solution according to claim 1 or 2, wherein

a content of an organic solvent is 30% by mass or more with respect to a total amount of the polymer-containing composition excluding the (meth)acrylic copolymer.

4. The polymer-containing composition according to claim 3, wherein a water content is 15% by mass or less.

5. The polymer-containing composition according to claim 3 or 4, wherein the macromonomer (b) is a macromonomer having a number average molecular weight of from 500 to 50000 as determined by gel permeation chromatography (GPC) using polystyrene as a reference substance.

~~An anti-fouling coating composition comprising the polymer-containing composition according to claim 3 or 4.~~

6. ~~The~~ An anti-fouling coating composition comprising the polymer-containing composition according to any one of claims 3 to 5~~, further comprising an anti-fouling agent~~.

7. The anti-fouling coating composition according to claim 6, further comprising an anti-fouling agent.

8. ~~**7.**~~ The anti-fouling coating composition according to claim 7 ~~6~~, wherein the anti-fouling agent contains at least one kind selected from the group consisting of cuprous oxide, 4-bromo-2-(4-chlorophenyl)-5-(trifluoromethyl)-1H-pyrrole-3-carbonitrile, pyridine-triphenylborane, and medetomidine.

9. ~~**8.**~~ The anti-fouling coating composition according to any one of claims 6 to 8 ~~5 to 7~~, wherein a viscosity of the anti-fouling coating composition at 25°C as

measured by a B-type viscometer is 5000 mPa·s or less.

10. ~~**9.**~~ The anti-fouling coating composition according to any one of claims 6 to 9 ~~5 to 8~~, wherein a VOC content is 500 g/L or less,

wherein the VOC content is calculated by the following formula:

VOC content (g/L) = specific gravity of measurement sample × 1000 × (100 - solid content)/100

wherein the specific gravity is determined as in the Examples under the heading "VOC Content" and the solid content is determined as in the Examples under the heading "Solid content (Heating Residue)".

11. ~~**10.**~~ The anti-fouling coating composition according to any one of claims 6 to 10 ~~5 to 9~~, further comprising a thermoplastic resin other than the (meth)acrylic copolymer.

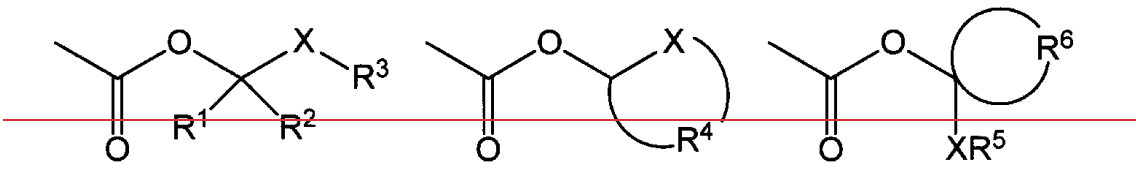
~~11. A method for producing a polymer solution according to claim 1, comprising:~~

~~a step of obtaining a (meth)acrylic copolymer by polymerizing a monomer mixture containing~~

~~at least one kind of monomer (a) selected from the group consisting of a monomer (a1) having at least one kind of structure (I) selected from the group consisting of structures represented by the following formula (1), formula (2), or formula (3), a monomer (a2) having triorganosilyloxycarbonyl group, and at least one kind of monomer (a3) selected from the group consisting of a monomer represented by the following formula (a3-1) and a monomer represented by the following formula (a3-2) and~~

~~a macromonomer having a radically polymerizable group and two or more constitutional units represented by the following formula (b'):~~

~~[Chem. 2]~~



(1) (2) (3)

~~$(CH_2=C(R^{31})-CO-O)_2M$ · · · (a3-1)~~

~~$CH_2=C(R^{31})-CO-O-M-R^{32}$ · · · (a3-2)~~

(where, M represents Zn, Cu, Mg, or Ca and R^{32} represents an organic acid residue other than a (meth)acryloyloxy group, R^{41} represents a hydrogen atom, a methyl group, or CH_2OH and R^{42} represents OR^{43}, a halogen atom, COR^{44}, $COOR^{45}$, CN, $CONR^{46}R^{47}$, or R^{48}, where R^{43} to R^{47} each independently represent a hydrogen atom, an unsubstituted or substituted alkyl group, an unsubstituted or substituted alicyclic group, an unsubstituted or substituted aryl group, an unsubstituted or substituted heteroaryl group, an unsubstituted or substituted nonaromatic heterocyclic group, an unsubstituted or substituted aralkyl group, an unsubstituted or substituted alkaryl group, or an unsubstituted or substituted organosilyl group and R^{48} represents an unsubstituted or substituted aryl group or an unsubstituted or substituted heteroaryl group).