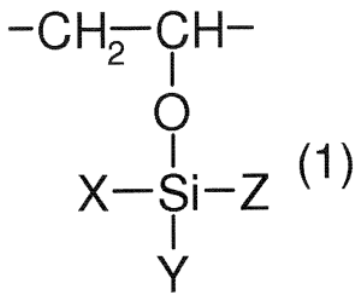
CLAIMS

1. A modified vinyl alcohol polymer comprising a structural unit represented by the following formula (1), and having a water-insoluble content of 1,000 ppm or less,



(1)

wherein, in the formula (1),

X, Y, and Z each independently represent an alkyl group having 1 to 20 carbon atoms, an alkenyl group having 2 to 20 carbon atoms, a phenyl group, a benzyl group, a vinylphenyl group, a halogenated alkyl group having 1 to 20 carbon atoms, a halogenated phenyl group, an aminoalkyl group having 1 to 20 carbon atoms, a mercaptoalkyl group having 1 to 20 carbon atoms, an ureidoalkyl group having 2 to 20 carbon atoms, an isocyanate alkyl group having 2 to 8 carbon atoms, a group having 3 to 20 carbon atoms and comprising an epoxy group, a group having 3 to 20 carbon atoms and comprising an acrylamide group, a group having 4 to 20 carbon atoms and comprising a methacrylamide group, an acetoxy group, or a group represented by $-(CH_2)_n-O-R^1$ (wherein R^1 represents a hydrogen atom, an alkali metal atom, an alkaline earth metal atom, an alkyl group having 1 to 20 carbon atoms, an alkenyl group having 2 to 20 carbon atoms, an acryloyl group, a methacryloyl group, or a glycidyl group; and n represents an integer of 0 to 6).

2. The modified vinyl alcohol polymer according to claim 1, wherein a content of the structural unit represented by the above formula (1) is 0.01 mol% or more and less than 5 mol%.

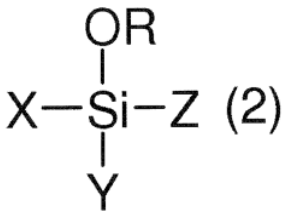
3. The modified vinyl alcohol polymer according to claim 1 or 2, wherein a content of the structural unit represented by the above formula (1) with respect to total structural units comprising a silicon atom is 90 mol% or more.

4. A method for producing the modified vinyl alcohol polymer according to any one of claims 1 to 3, the method comprising impregnating, with a silane coupling agent, a vinyl alcohol polymer that is in a solid state.

5. The method for producing a modified vinyl alcohol polymer according to claim 4,

wherein in the impregnating, particles of the vinyl alcohol polymer are impregnated by spraying a solution comprising the silane coupling agent.

6. The method for producing a modified vinyl alcohol polymer according to claim 4 or 5, wherein the silane coupling agent comprises a structure represented by the following formula (2),



wherein, in the formula (2),

R represents an alkyl group having 1 to 8 carbon atoms, an acetyl group, or $-(CH_2)_m-O-R^2$ (wherein R^2 represents an alkyl group having 1 to 20 carbon atoms, and m represents an integer of 1 to 6); and

X, Y, and Z each independently represent an alkyl group having 1 to 20 carbon atoms, an alkenyl group having 2 to 20 carbon atoms, a phenyl group, a benzyl group, a vinylphenyl group, a halogenated alkyl group having 1 to 20 carbon atoms, a halogenated phenyl group, an aminoalkyl group having 1 to 20 carbon atoms, a mercaptoalkyl group having 1 to 20 carbon atoms, an ureidoalkyl group having 2 to 20 carbon atoms, an isocyanate alkyl group having 2 to 8 carbon atoms, a group having 3 to 20 carbon atoms and comprising an epoxy group, a group having 3 to 20 carbon atoms and comprising an acrylamide group, a group having 4 to 20 carbon atoms and comprising a methacrylamide group, an acetoxy group, or a group represented by $-(CH_2)_n-O-R^1$ (wherein R^1 represents an alkyl group having 1 to 20 carbon atoms, an alkenyl group having 2 to 20 carbon atoms, an acryloyl group, a methacryloyl group, or a glycidyl group; and n represents an integer of 0 to 6).

7. The method for producing a modified vinyl alcohol polymer according to claim 4, 5, or 6, further comprising heat treating the vinyl alcohol polymer which is impregnated with the silane coupling agent and obtained in the impregnating.

8. Particles comprising the modified vinyl alcohol polymer according to claim 1, 2, or 3.

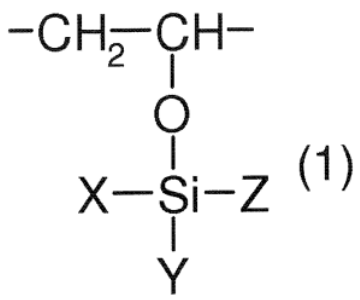
9. The particles according to claim 8, wherein a dispersity A of silicon atoms is 0.2 or more and less than 1.

10. An aqueous solution comprising the modified vinyl alcohol polymer according to

claim 1, 2, or 3.

11. A coating liquid comprising a modified vinyl alcohol polymer comprising a structural unit represented by the following formula (1), and having a water-insoluble content of 1,000 ppm or less, wherein

a content of the structural unit represented by the following formula (1) with respect to total structural units comprising a silicon atom is 90 mol% or more,



(1)

wherein, in the formula (1),

X, Y, and Z each independently represent an alkyl group having 1 to 20 carbon atoms, an alkenyl group having 2 to 20 carbon atoms, a phenyl group, a benzyl group, a vinylphenyl group, a halogenated alkyl group having 1 to 20 carbon atoms, a halogenated phenyl group, an aminoalkyl group having 1 to 20 carbon atoms, a mercaptoalkyl group having 1 to 20 carbon atoms, an ureidoalkyl group having 2 to 20 carbon atoms, an isocyanate alkyl group having 2 to 8 carbon atoms, a group having 3 to 20 carbon atoms and comprising an epoxy group, a group having 3 to 20 carbon atoms and comprising an acrylamide group, a group having 4 to 20 carbon atoms and comprising a methacrylamide group, an acetoxy group, or a group represented by $-(CH_2)_n-O-R^1$ (wherein R^1 represents a hydrogen atom, an alkali metal atom, an alkaline earth metal atom, an alkyl group having 1 to 20 carbon atoms, an alkenyl group having 2 to 20 carbon atoms, an acryloyl group, a methacryloyl group, or a glycidyl group; and n represents an integer of 0 to 6).

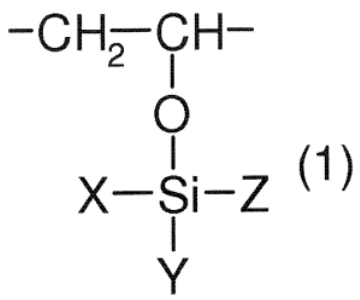
12. The coating liquid according to claim 11, wherein a content of the structural unit represented by the above formula (1) in the modified vinyl alcohol polymer is 0.01 mol% or more and less than 5 mol%.

13. The coating liquid according to claim 11 or 12, wherein the modified vinyl alcohol polymer has a viscosity-average degree of polymerization of 500 or more and 5,000 or less, and a degree of saponification of 70 mol% or more and 99.9 mol% or less.

14. A coated article comprising a base having the coating liquid according to any one of claims 11 to 13 applied thereto.

15. A dispersant comprising a modified vinyl alcohol polymer comprising a structural unit represented by the following formula (1), and having a water-insoluble content of 1,000 ppm or less, wherein

a content of the structural unit represented by the following formula (1) with respect to total structural units comprising a silicon atom is 90 mol% or more,



(1)

wherein, in the formula (1),

X, Y, and Z each independently represent an alkyl group having 1 to 20 carbon atoms, an alkenyl group having 2 to 20 carbon atoms, a phenyl group, a benzyl group, a vinylphenyl group, a halogenated alkyl group having 1 to 20 carbon atoms, a halogenated phenyl group, an aminoalkyl group having 1 to 20 carbon atoms, a mercaptoalkyl group having 1 to 20 carbon atoms, an ureidoalkyl group having 2 to 20 carbon atoms, an isocyanate alkyl group having 2 to 8 carbon atoms, a group having 3 to 20 carbon atoms and comprising an epoxy group, a group having 3 to 20 carbon atoms and comprising an acrylamide group, a group having 4 to 20 carbon atoms and comprising a methacrylamide group, an acetoxy group, or a group represented by $-(CH_2)_n-O-R^1$ (wherein R^1 represents a hydrogen atom, an alkali metal atom, an alkaline earth metal atom, an alkyl group having 1 to 20 carbon atoms, an alkenyl group having 2 to 20 carbon atoms, an acryloyl group, a methacryloyl group, or a glycidyl group; and n represents an integer of 0 to 6).

16. The dispersant according to claim 15, wherein a content of the structural unit represented by the above formula (1) in the modified vinyl alcohol polymer is 0.01 mol% or more and less than 5 mol%.

17. The dispersant according to claim 15 or 16, wherein the modified vinyl alcohol polymer has a viscosity-average degree of polymerization of 500 or more and 1,500 or less, and a degree of saponification of 60 mol% or more and 90 mol% or less.

18. The dispersant according to any one of claims 15 to 17, which is for use in suspension polymerization.

19. A method for producing a vinyl polymer, the method comprising subjecting a vinyl compound to suspension polymerization in the presence of the dispersant according to any one of claims 15 to 18.

20. A mixture comprising:
a vinyl compound; and
the dispersant according to any one of claims 15 to 18.