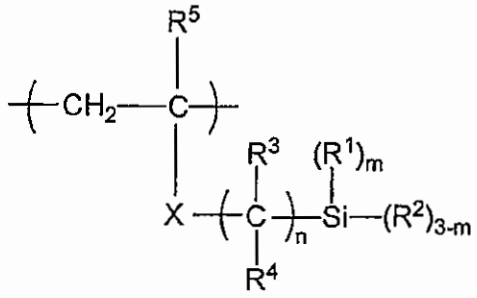
CLAIMS

1. A vinyl alcohol polymer comprising a monomer unit represented by a following formula (1):

[Chemical Formula 1]



(1)

wherein in the formula (1),

X represents a direct bond, a divalent hydrocarbon group or a divalent organic group having an oxygen atom or a nitrogen atom;

R^1 represents a hydrogen atom or an alkyl group having 1 to 5 carbon atoms;

R^2 represents an alkoxyl group, an acyloxyl group or a group represented by OM, wherein M represents a hydrogen atom, an alkali metal or an ammonium group;

R^3 and R^4 each independently represent a hydrogen atom or an alkyl group, wherein hydrogen atoms included in the alkyl group, the alkoxyl group and the acyloxyl group represented by R^1 to R^4 are unsubstituted or substituted with a substituent having an oxygen atom or a nitrogen atom;

R^5 represents a hydrogen atom or a methyl group;

m is an integer of 0 to 2; and

n is an integer of 3 or greater,

wherein in a case where R^1 to R^5 are each present in a plurality of number, a plurality of R^1s are each independently as defined above, a plurality of R^2s are each independently as defined above, a plurality of R^3s are each independently as defined above, a plurality of R^4s are each independently as defined above, and a plurality of R^5s are each independently as defined above,

and an inequality (I) being satisfied:

$$370 \leq P \times S \leq 6{,}000 \qquad (I)$$

wherein, P represents a viscosity average degree of polymerization of the vinyl alcohol polymer; and S represents a percentage content (mol%) of the monomer unit.

2. The vinyl alcohol polymer according to claim 1,
wherein inequalities (II) and (III) are further satisfied:
$200 \leq P \leq 4{,}000$ (II)
$0.1 \leq S \leq 10$ (III)
wherein, P represents a viscosity average degree of polymerization of the vinyl alcohol polymer; and S represents a percentage content (mol%) of the monomer unit, and
wherein n in the above formula (1) is an integer of 6 or greater and 20 or less.

3. The vinyl alcohol polymer according to claim 1, wherein X in the above formula (1) is represented by $-CO-NR^6-*$, wherein, R^6 represents a hydrogen atom or an alkyl group having 1 to 5 carbon atoms; and * denotes a binding site on a side where a Si atom is included shown in the above formula (1), and n is an integer of 12 or less.

4. An aqueous solution comprising the vinyl alcohol polymer according to claim 1 in an amount of 4% by mass or more and 20% by mass or less, and having a pH of 4 or higher and 8 or lower.

5. A coating agent comprising the vinyl alcohol polymer according to claim 1.

6. A coated article produced by applying the coating agent according to claim 5 on a surface of a substrate.

7. A method for producing a coated article, comprising:
applying the coating agent according to claim 5 on a surface of a substrate.

8. An ink jet recording material comprising the vinyl alcohol polymer according to claim 1.

9. The ink jet recording material according to claim 8, comprising:

a substrate; and

an ink-receiving layer provided on a surface of the substrate,

the ink-receiving layer being provided by applying a coating agent for an ink jet recording material that comprises the vinyl alcohol polymer.

10. A method for producing the ink jet recording material according to claim 8, comprising:

applying on a substrate a coating agent for an ink jet recording material that comprises the vinyl alcohol polymer.

11. A method for producing a printed article, comprising:

subjecting the ink jet recording material according to claim 8 to ink jet printing.

12. A thermal recording material comprising the vinyl alcohol polymer according to claim 1.

13. The thermal recording material according to claim 12, comprising:

a substrate;

a thermal coloring layer provided on a surface of the substrate; and

an overcoat layer provided on a surface of the thermal coloring layer,

at least one of the thermal coloring layer and the overcoat layer being provided by applying a coating agent for a thermal recording material that comprises the vinyl alcohol polymer.

14. A method for producing the thermal recording material according to claim 12, comprising:

applying on a substrate a coating agent for a thermal recording material that comprises the vinyl alcohol polymer.

15. A method for producing a printed article, comprising:

subjecting the thermal recording material according to claim 12 to printing.

16. A base paper for a release paper comprising the vinyl alcohol polymer according to claim 1.

17. The base paper for a release paper according to claim 16, comprising:

a paper substrate; and

a coating layer provided on a surface of the paper substrate,

the coating layer being provided by applying a coating agent for a base paper for a release paper that comprises the vinyl alcohol polymer.

18. A method for producing the base paper for a release paper according to claim 16, comprising:

applying on a paper substrate a coating agent for a base paper for a release paper that comprises the vinyl alcohol polymer.

19. A release paper, comprising:

the base paper for a release paper according to claim 16; and

a release layer provided on a surface of the base paper for a release paper.

20. A laminate, comprising:

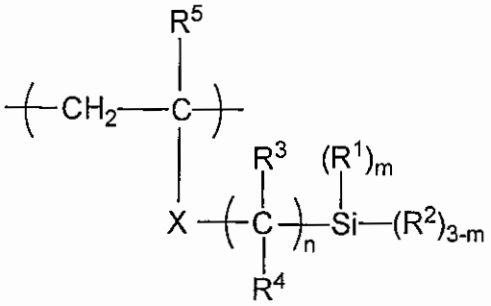
the base paper for a release paper according to claim 16;

a release layer provided on a surface of the base paper for a release paper; and

a tacky layer provided on a surface of the release layer.

CLAIMS

1. A vinyl alcohol polymer, comprising a monomer unit represented by formula (1):



(1)

wherein:

X represents a direct bond, a divalent hydrocarbon group, or a divalent organic group having an oxygen atom or a nitrogen atom;

R^1 represents a hydrogen atom or an alkyl group having 1 to 5 carbon atoms;

R^2 represents an alkoxyl group, an acyloxyl group or a group represented by OM, wherein M represents a hydrogen atom, an alkali metal or an ammonium group;

R^3 and R^4 each independently represent a hydrogen atom or an alkyl group, wherein hydrogen atoms included in the alkyl group, the alkoxyl group and the acyloxyl group represented by R^1 to R^4 are unsubstituted or substituted with a substituent having an oxygen atom or a nitrogen atom;

R^5 represents a hydrogen atom or a methyl group;

m is an integer of 0 to 2; and

n is an integer of 6 to 20,

wherein in a case where R^1 to R^5 are each present in a plurality of number, a plurality of R^1s are each independently as defined above, a plurality of R^2s are each independently as defined above, a plurality of R^3s are each independently as defined above, a plurality of R^4s are each independently as defined above, and a plurality of R^5s are each independently as defined above,

and inequalities (I), (II), and (III) are satisfied:

$370 \leq P \times S \leq 6{,}000$ (I)

$200 \leq P \leq 4{,}000$ (II)

$0.1 \leq S \leq 10$ (III);

wherein:

P represents a viscosity average degree of polymerization of the vinyl alcohol polymer; and S represents a percentage content (mol%) of the monomer unit.

2. The vinyl alcohol polymer according to claim 1, wherein:

X in formula (1) is represented by $-CO-NR^6-*$;

R^6 represents a hydrogen atom or an alkyl group having 1 to 5 carbon atoms;
* denotes a binding site on a side where a Si atom is included in formula (1); and
n is an integer of 6 to 12.

3. An aqueous solution, comprising water and the vinyl alcohol polymer according to claim 1 in an amount of 4% by mass or more and 20% by mass or less, and having a pH of 4 or higher and 8 or lower.

4. A coating agent, comprising:
at least one of water and a non-aqueous solvent, and
the vinyl alcohol polymer according to claim 1.

5. An ink jet recording material, comprising the vinyl alcohol polymer according to claim 1.

6. A thermal recording material, comprising the vinyl alcohol polymer according to claim 1.

7. A base paper for a release paper, the base paper comprising the vinyl alcohol polymer according to claim 1.

8. The vinyl alcohol polymer according to claim 1, wherein X represents a direct bond.

9. The vinyl alcohol polymer according to claim 1, wherein X represents a divalent hydrocarbon group selected from the group consisting of a divalent aliphatic hydrocarbon group having 1 to 10 carbon atoms and a divalent aromatic hydrocarbon group having 6 to 10 carbon atoms.

10. The vinyl alcohol polymer according to claim 1, wherein X represents a divalent organic group having an oxygen atom or a nitrogen atom selected from the group consisting of an ether group, an ester group, a carbonyl group, an amide group, a group derived by linking an ether group, an ester group, a carbonyl group, or an amide group with a divalent hydrocarbon group, an imino group, an amide group, and a group derived by linking an imino group or an amide group with a divalent hydrocarbon group.

11. The vinyl alcohol polymer according to claim 1, wherein $400 \leq P \times S \leq 3{,}000$, $500 \leq P \leq 3{,}000$ and $0.25 \leq S \leq 6$.

12. The vinyl alcohol polymer according to claim 1, wherein $500 \leq P \times S \leq 2{,}000$, $1{,}000 \leq P \leq 2{,}400$ and $0.5 \leq S \leq 5$.

13. The vinyl alcohol polymer according to claim 24, wherein X represents a direct bond, a divalent hydrocarbon group

selected from the group consisting of a divalent aliphatic hydrocarbon group having 1 to 10 carbon atoms and a divalent aromatic hydrocarbon group having 6 to 10 carbon atoms, or a divalent organic group having an oxygen atom or a nitrogen atom selected from the group consisting of an ether group, an ester group, a carbonyl group, an amide group, a group derived by linking an ether group, an ester group, a carbonyl group, or an amide group with a divalent hydrocarbon group, an imino group, an amide group, and a group derived by linking an imino group or an amide group with a divalent hydrocarbon group.

14. The vinyl alcohol polymer according to claim 25, wherein X represents a direct bond, a divalent hydrocarbon group selected from the group consisting of a divalent aliphatic hydrocarbon group having 1 to 10 carbon atoms and a divalent aromatic hydrocarbon group having 6 to 10 carbon atoms, or a divalent organic group having an oxygen atom or a nitrogen atom selected from the group consisting of an ether group, an ester group, a carbonyl group, an amide group, a group derived by linking an ether group, an ester group, a carbonyl group, or an amide group with a divalent hydrocarbon group, an imino group, an amide group, and a group derived by linking an imino group or an amide group with a divalent hydrocarbon group.