CLAIMS

1. A polyester resin for an antifouling coating material obtained by reacting a (a) trihydric or greater alcohol, a (b) dibasic acid or its anhydride and a (c) divalent alcohol, and then further reacting with an (d) alicyclic dibasic acid or its anhydride.

2. The polyester resin for an antifouling coating material according to claim 1, wherein the (d) alicyclic dibasic acid or its anhydride is an alicyclic dibasic acid anhydride.

3. The polyester resin for an antifouling coating material according to claim 1 or 2, wherein the (d) alicyclic dibasic acid or its anhydride comprises hexahydrophthalic anhydride.

4. The polyester resin for an antifouling coating material according to any one of claims 1 to 3, wherein the (a) trihydric or greater alcohol comprises one or more of glycerin and trimethylolpropane.

5. The polyester resin for an antifouling coating material according to any one of claims 1 to 4, which comprises one or more of an alicyclic dibasic acid anhydride and an aromatic dibasic acid anhydride as the (b) dibasic acid or its anhydride.

6. The polyester resin for an antifouling coating material according to any one of claims 1 to 4, wherein the (c) divalent alcohol is a branched alkylene glycol.

7. A polyester resin for an antifouling coating material, comprising a compound having the structure represented by formula (1):

$$R^1\{O\text{-}CO\text{-}R^2\text{-}CO\text{-}O\text{-}R^3\text{-}O\text{-}CO\text{-}R^4\text{-}CO\text{-}OH\}_n \quad \cdots (1)$$

wherein R^1 is selected from among C3-24 trivalent or tetravalent hydrocarbon groups, R^2 and R^3 are selected from among C2-34

divalent hydrocarbon groups, R^4 is selected from among C3-24 divalent alicyclic hydrocarbon groups, and n represents an integer of 3 or 4.

8. The polyester resin for an antifouling coating material according to any one of claims 1 to 7, wherein the acid value of the solid portion is 50 to 250 mgKOH/g.

9. A method for producing a polyester resin for an antifouling coating material, comprising a first step of reacting a (a) trihydric or greater alcohol, a (b) dibasic acid or its anhydride and a (c) divalent alcohol, and a second step of further reacting an (d) alicyclic dibasic acid or its anhydride after the first step.

10. The method for producing a polyester resin for an antifouling coating material according to claim 9, wherein the (d) alicyclic dibasic acid or its anhydride is an alicyclic dibasic acid anhydride.

11. The method for producing a polyester resin for an antifouling coating material according to claim 9 or 10, wherein the (d) alicyclic dibasic acid or its anhydride comprises hexahydrophthalic anhydride.

12. The method for producing a polyester resin for an antifouling coating material according to any one of claims 9 to 11, wherein the (a) trihydric or greater alcohol comprises one or more of glycerin and trimethylolpropane.

13. The method for producing a polyester resin for an antifouling coating material according to any one of claims 9 to 12, wherein the polyester resin comprises one or more of an alicyclic dibasic acid anhydride and an aromatic dibasic acid anhydride as the (b) dibasic acid or its anhydride.

14. The method for producing a polyester resin for an antifouling coating material according to any one of claims 9 to 13, wherein the (c) divalent alcohol is a branched alkylene glycol.

15. A coating composition comprising the polyester resin according to any one of claims 1 to 8.

16. An antifouling coating material composition comprising the polyester resin according to any one of claims 1 to 8.

17. The antifouling coating material composition according to claim 16, further comprising a polyvalent metal compound.

18. The antifouling coating material composition according to claim 17, wherein the polyvalent metal compound is at least one compound selected from the group consisting of oxides, hydroxides, halides and carbonates of divalent or trivalent metals.

19. The antifouling coating material composition according to claim 17 or 18, wherein the polyvalent metal compound is zinc oxide.

20. The antifouling coating material composition according to any one of claims 17 to 19, wherein the polyvalent metal compound content is 10 to 700 parts by mass with respect to 100 parts by mass of the polyester resin.

21. The antifouling coating material composition according to any one of claims 16 to 20, further comprising a rosin and/or a rosin derivative.

22. The antifouling coating material composition according to any one of claims 16 to 21, further comprising an antifouling agent.

23. The antifouling coating material composition according to any one of claims 16 to 22, further comprising a plasticizer.

24. The antifouling coating material composition according to any one

of claims 16 to 23, further comprising an extender pigment (excluding said polyvalent metal compound).

25. The antifouling coating material composition according to any one of claims 16 to 24, further comprising a pigment dispersant.

26. The antifouling coating material composition according to any one of claims 16 to 25, further comprising a color pigment.

27. The antifouling coating material composition according to any one of claims 16 to 26, further comprising a dehydrating agent.

28. The antifouling coating material composition according to any one of claims 16 to 27, further comprising a volatile organic compound, wherein the volatile organic compound content is no greater than 400 g/L.

29. An antifouling coating film obtained by curing the antifouling coating material composition according to any one of claims 16 to 28.

30. An antifouling base obtained by coating or impregnating a base with the antifouling coating material composition according to any one of claims 16 to 28, and curing the coating composition that has been coated onto or impregnated into the base to form an antifouling coating film on the base.

31. A method for producing an antifouling base comprising:

coating or impregnating a base with the antifouling coating material composition according to any one of claims 16 to 28, and

curing the coating composition that has been coated onto or impregnated into the base to form an antifouling coating film on the base.

CLAIMS

1. A polyester resin for an antifouling coating material, comprising a compound having the structure represented by formula (1):

$$R^1\{O\text{-}CO\text{-}R^2\text{-}CO\text{-}O\text{-}R^3\text{-}O\text{-}CO\text{-}R^4\text{-}CO\text{-}OH\}_n \quad \cdots (1)$$

wherein R^1 is selected from among C3-24 trivalent or tetravalent hydrocarbon groups, R^2 and R^3 are selected from among C2-34 divalent hydrocarbon groups, R^4 is selected from among C3-24 divalent alicyclic hydrocarbon groups, and n represents an integer of 3 or 4, and wherein the polyester resin comprises a solid portion where the acid value of the solid portion is 80 to 250 mgKOH/g.

2. A method for producing a polyester resin for an antifouling coating material, comprising a first step of reacting a (a) trihydric or greater alcohol, a (b) dibasic acid or its anhydride and a (c) divalent alcohol, and a second step of further reacting an (d) alicyclic dibasic acid or its anhydride after the first step, and wherein the polyester resin comprises a solid portion where the acid value of the solid portion is 80 to 250 mgKOH/g.

3. The method for producing a polyester resin for an antifouling coating material according to claim 2, wherein the (d) alicyclic dibasic acid or its anhydride is an alicyclic dibasic acid anhydride.

4. The method for producing a polyester resin for an antifouling coating material according to claim 2 or 3, wherein the (d) alicyclic dibasic acid or its anhydride comprises hexahydrophthalic anhydride.

5. The method for producing a polyester resin for an antifouling coating material according to any one of claims 2 to 4, wherein the (a) trihydric or greater alcohol comprises one or more of glycerin and trimethylolpropane.

6. The method for producing a polyester resin for an antifouling coating material according to any one of claims 2 to 5, wherein the polyester resin comprises one or more of an alicyclic dibasic acid anhydride and an aromatic dibasic acid anhydride as the (b) dibasic acid or its anhydride.

7. The method for producing a polyester resin for an antifouling coating material according to any one of claims 2 to 6, wherein the (c) divalent alcohol is a branched alkylene glycol.

8. A coating composition comprising the polyester resin according to claim 1.

9. An antifouling coating material composition comprising the polyester resin according to claim 1.

10. The antifouling coating material composition according to claim 9, further comprising a polyvalent metal compound.

11. The antifouling coating material composition according to claim 10, wherein the polyvalent metal compound is at least one compound selected from the group consisting of oxides, hydroxides, halides and carbonates of divalent or trivalent metals.

12. The antifouling coating material composition according to claim 10 or 11, wherein the polyvalent metal compound is zinc oxide.

13. The antifouling coating material composition according to any one of claims 10 to 12, wherein the polyvalent metal compound content is 10 to 700 parts by mass with respect to 100 parts by mass

of the polyester resin.

14. The antifouling coating material composition according to any one of claims 9 to 13, further comprising a rosin and/or a rosin derivative.

15. The antifouling coating material composition according to any one of claims 9 to 14, further comprising an antifouling agent.

16. The antifouling coating material composition according to any one of claims 9 to 15, further comprising a plasticizer.

17. The antifouling coating material composition according to any one of claims 9 to 16, further comprising an extender pigment (excluding said polyvalent metal compound).

18. The antifouling coating material composition according to any one of claims 9 to 17, further comprising a pigment dispersant.

19. The antifouling coating material composition according to any one of claims 9 to 18, further comprising a color pigment.

20. The antifouling coating material composition according to any one of claims 9 to 19, further comprising a dehydrating agent.

21. The antifouling coating material composition according to any one of claims 9 to 20, further comprising a volatile organic compound, wherein the volatile organic compound content is no greater than 400 g/L.

22. An antifouling coating film obtained by curing the antifouling coating material composition according to any one of claims 9 to 21.

23. An antifouling base, comprising:
a base, and
the antifouling coating film according to claim 22 formed on the base.

24. A method for producing an antifouling base comprising:
coating or impregnating a base with the antifouling coating material composition according to any one of claims 9 to 21, and
curing the coating composition that has been coated onto or impregnated into the base to form an antifouling coating film on the base.