Summary of Invention

Problem to be solved by the Invention

[0006] The present invention has been made to solve the conventional problems and intends to provide an aqueous coating composition which can be formed into a coating film having a high diffuse reflectance and low gloss.

Means for solving the Problems

[0007] An aqueous coating composition according to an embodiment of the present invention includes titanium dioxide and porous calcium carbonate as pigments and an aqueous resin.

In one aspect, there is provided an aqueous coating composition, comprising titanium dioxide and porous calcium carbonate as pigments, and an aqueous resin, wherein the porous calcium carbonate has a porosity of 1.0 cm^3/g to 2.0 cm^3/g, the calcium carbonate has an average particle diameter of 0.5 μm to 20 μm, a volume ratio of the titanium dioxide and the porous calcium carbonate is titanium dioxide: calcium carbonate=80:20 to 55:45, the aqueous coating composition has a pigment volume concentration of 40% to 70%.

In one example~~a preferred embodiment of the invention~~, the porous calcium carbonate has a porosity of 0.5 cm^3/g to 2.5 cm^3/g.

In a preferred embodiment of the invention, the porous calcium carbonate has a whiteness degree of 90% to 99%.

In a preferred embodiment of the invention, the titanium dioxide has a rutile-type structure.

In a preferred embodiment of the invention, the titanium dioxide has an oil absorption amount of 25 g/100 g to 40 g/100 g.

In a preferred embodiment of the invention, a total content

of the titanium dioxide and the porous calcium carbonate is 80 volume% to 100 volume% with respect to a whole amount of the pigments.

In one example~~a preferred embodiment of the invention~~, a volume ratio of the titanium dioxide and the porous calcium carbonate is titanium dioxide:calcium carbonate=80:20 to 55:45.

In a preferred embodiment of the invention, the aqueous coating composition further includes a coloring pigment.

In a preferred embodiment of the invention, a content ratio of the coloring pigment is 0.5 mass% or less with respect to a content of the titanium dioxide.

In one example~~a preferred embodiment of the invention~~, the aqueous coating composition has a pigment volume concentration of 40% to 70%.

In a preferred embodiment of the invention, the aqueous coating composition is formed into a coating film having a diffuse reflectance of 90% or more at a wavelength of 550 nm.

Effects of the Invention

[0008] The present invention can provide the aqueous coating composition which can be formed into a coating film having a high diffuse reflectance and low gloss by virtue of including titanium

Claims

[Claim 1] An aqueous coating composition, comprising titanium dioxide and porous calcium carbonate as pigments, and an aqueous resin.

[Claim 2] An aqueous coating composition according to claim 1, wherein the porous calcium carbonate has a porosity of 0.5 cm^3/g to 2.5 cm^3/g.

[Claim 3] An aqueous coating composition according to claim 1 or 2, wherein the porous calcium carbonate has a whiteness degree of 90% to 99%.

[Claim 4] An aqueous coating composition according to any one of claims 1 to 3, wherein the titanium dioxide has a rutile-type structure.

[Claim 5] An aqueous coating composition according to any one of claims 1 to 4, wherein the titanium dioxide has an oil absorption amount of 25 g/100 g to 40 g/100 g.

[Claim 6] An aqueous coating composition according to any one of claims 1 to 5, wherein a total content of the titanium dioxide and the porous calcium carbonate is 80 volume% to 100 volume% with respect to a whole amount of the pigments.

[Claim 7] An aqueous coating composition according to any one of claims 1 to 6, wherein a volume ratio of the titanium dioxide and the porous calcium carbonate is titanium dioxide:calcium carbonate=80:20 to 55:45.

[Claim 8] An aqueous coating composition according to any one of claims 1 to 7, further comprising a coloring pigment.

[Claim 9] An aqueous coating composition according to claims 8, wherein a content ratio of the coloring pigment is 0.5 mass% or less with respect to a content of the titanium dioxide.

[Claim 10] An aqueous coating composition according to any one of claims 1 to 9, wherein the aqueous coating composition has a pigment volume concentration of 40% to 70%.

[Claim 11] An aqueous coating composition according to any one of claims 1 to 10, wherein the aqueous coating composition is formed into a coating film having a diffuse reflectance of 90% or more at a wavelength of 550 nm.

Claims

[Claim 1] An aqueous coating composition, comprising titanium dioxide and porous calcium carbonate as pigments, and an aqueous resin,

wherein the porous calcium carbonate has a porosity of 1.0 cm^3/g to 2.0 cm^3/g,

the calcium carbonate has an average particle diameter of 0.5 μm to 20 μm,

a volume ratio of the titanium dioxide and the porous calcium carbonate is titanium dioxide:calcium carbonate=80:20 to 55:45,

the aqueous coating composition has a pigment volume concentration of 40% to 70%.

[Claim 2] An aqueous coating composition according to claim 1, wherein the porous calcium carbonate has a whiteness degree of 90% to 99%.

[Claim 3] An aqueous coating composition according to claim 1 or 2, wherein the titanium dioxide has a rutile-type structure.

[Claim 4] An aqueous coating composition according to any one of claims 1 to 3, wherein the titanium dioxide has an oil absorption amount of 25 g/100 g to 40 g/100 g.

[Claim 5] An aqueous coating composition according to any one of claims 1 to 4, wherein a total content of the titanium dioxide and the porous calcium carbonate is 80 volume% to 100 volume% with respect to a whole amount of the pigments.

[Claim 6] An aqueous coating composition according to any one of claims 1 to 5, further comprising a coloring pigment.

[Claim 7] An aqueous coating composition according to claim 6, wherein a content ratio of the coloring pigment is 0.5 mass% or less with respect to a content of the titanium dioxide.

[Claim 8] An aqueous coating composition according to any one of claims 1 to 7, wherein the aqueous coating composition is formed into a coating film having a diffuse reflectance of 90% or more at a wavelength of 550 nm.