CLAIMS

[Claim 1]

A composite pigment comprising inorganic color pigment particles fixed to an inorganic compound, the composite pigment granularly aggregating two or more inorganic color pigment particles with the inorganic compound interposed between the particles, wherein the inorganic compound is being used for fixing the inorganic color pigment particles, and wherein

in a volume cumulative distribution measured by a laser diffraction/scattering-type particle size distribution measuring apparatus, an abundance ratio of the composite pigment having a particle diameter of 1 μm or more is 50% or more based on the total amount of the composite pigment, and a diameter on cumulative 90% (D90) is 30 μm or less.

[Claim 2]

The composite pigment according to claims 1, wherein an abundance ratio of the composite pigment having a particle diameter of 2 μm or more in the volume cumulative distribution is 30% or more based on the total amount of the composite pigment.

[Claim 3]

The composite pigment according to claim 1 or 2, wherein when a specular gloss of a paint composition prepared by blending the composite pigment with an acrylic resin is measured in accordance with a method specified in JIS-K5600-4-7, the specular gloss is 5% or less at a geometric condition of 60°.

[Claim 4]

The composite pigment according to any one of claims 1 to 3, wherein when a specular gloss of a paint composition prepared by blending the composite pigment with an acrylic resin is measured in accordance with the method specified in JIS-K5600-4-7, the specular gloss is 40% or less at a geometric condition of 85°.

[Claim 5]

The composite pigment according to any one of claims 1 to 4, wherein the inorganic color pigment is at least one selected from the group consisting of titanium dioxide, lower titanium oxide, titanium oxynitride, zinc oxide, basic lead carbonate, carbon black, bone black, graphite, iron black, cobalt chromate black spinel, iron chromate composite oxide, copper chromate spinel black composite oxide, Fe-Mn-Bi black, red iron oxide, molybdenum red, nickel antimony titanium yellow, chrome antimony titanium buff, synthetic iron oxide yellow, chrome yellow, ultramarine blue, iron blue, cobalt blue, cobalt green, chrome green, chromium oxide green, cobalt chromate green spinel and cobalt titanate green spinel.

[Claim 6]

The composite pigment according to any one of claims 1 to 5, wherein the inorganic compound is an inorganic silicon compound.

[Claim 7]

The composite pigment according to any one of claims 1 to 5, wherein the inorganic compound comprises an oxide, hydroxide or hydrous oxide of silicon, aluminum, zirconium, antimony, tin, cerium, zinc, and/or titanium.

[Claim 8]

The composite pigment according to any one of claims 1 to 5, wherein the inorganic compound comprises silica, aluminum oxide, aluminum hydroxide, zirconium oxide, antimony oxide, tin oxide, cerium oxide, zinc oxide, and/or titanium oxide.

[Claim 9]

The composite pigment according to any one of claims 1 to 5, wherein the inorganic compound comprises silica.

[Claim 10]

A composite pigment comprising inorganic color pigment particles which are fixed to an inorganic compound, and contain zinc element.

[Claim 11]

The composite pigment according to any one of claims 1 to 9, wherein a zinc element is present on surface of the inorganic color pigment particles and/or is contained inside the inorganic color pigment particles.

[Claim 12]

The composite pigment according to claim 10 or 11, wherein the zinc element is present at surfaces of the inorganic color pigment particles.

[Claim 13]

The composite pigment according to any one of claims 10 to 12, wherein the zinc element is present as zinc oxide and/or zinc hydroxide.

[Claim 14]

The composite pigment according to any one of claims 1 to 13, wherein the inorganic color pigment particles are a titanium dioxide pigment.

[Claim 15]

A matting pigment comprising the composite pigment set forth in any one of claims 1 to 14.

[Claim 16]

A paint composition comprising the composite pigment set forth in any one of

claims 1 to 14, and/or the matting pigment set forth in claim 15, and a resin.

[Claim 17]

The paint composition according to claim 16, comprising a dispersant having an amine value.

[Claim 18]

A paint film comprising the paint composition set forth in claim 16 or 17.

[Claim 19]

The paint film according to claim 18, wherein the paint film contains an acrylic resin, and when a specular gloss is measured by a method specified in JIS-K5600-4-7, the specular gloss is 5% or less under a geometric condition of 60°.

[Claim 20]

The paint film according to claim 18 or 19, wherein the paint film contains an acrylic resin, and when a specular gloss is measured by a method specified in JIS-K5600-4-7, the specular gloss is 40% or less under a geometric condition of 85°.

[Claim 21]

A method for producing a composite pigment according to claim 1, comprising:

preparing a slurry containing an inorganic compound source and inorganic color pigment particles

wherein the slurry contains the inorganic compound source and the inorganic color pigment particles in such a manner that a volume ratio (Va/Vb) of a volume (Va) of the inorganic compound source, which is calculated in terms of a precipitated inorganic compound, to a volume (Vb) of the inorganic color pigment is 0.3 or more and 2 or less, and has a solid content concentration of 75 g/L or more and 450 g/L or less; and

adjusting a pH of the slurry, so that an inorganic compound derived from the inorganic compound source is precipitated to fix the inorganic color pigment particles.

[Claim 22]

A method for producing a composite pigment according to claim 10, comprising

preparing a slurry containing inorganic color pigment particles containing zinc element, and an inorganic compound source, and

adjusting a pH of the slurry, so that an inorganic compound derived from the inorganic compound source is precipitated to fix the inorganic color pigment particles.