at low temperature.

Prior Art Document

Patent Document

[0004] [PTL 1] JP 11-166153 A

Summary ~~of Invention~~

[0004a] In a first aspect of the present disclosure, there is provided an aqueous coating composition, comprising:

(A) an aqueous epoxy-based polyamine resin having one or more primary amino groups and/or secondary amino groups in a molecule;

(B) a compound having one or more (meth)acryloyl groups in a molecule; and

(C) an alkoxysilane compound;

wherein an equivalent ratio of an amino group of the aqueous epoxy-based polyamine resin (A) and a (meth)acryloyl group of the compound (B) ((meth)acryloyl group/amino group) is 0.7 to 2.5; and a content of the alkoxysilane compound (C) in a solid content of the aqueous coating composition is 0.2 mass% to 5 mass%;

wherein the aqueous coating composition is a two-component aqueous coating composition comprising a base resin liquid for a coating material and a curing agent,

the base resin liquid for a coating material comprising the aqueous epoxy-based polyamine resin (A) and

the curing agent comprising the compound (B) and the alkoxysilane compound (C);

wherein the aqueous epoxy-based polyamine resin (A) has an amino group equivalent of 100 to 3,000; and

wherein the aqueous epoxy-based polyamine resin (A) is obtained by amine-modification of an epoxy resin, and the epoxy resin has an epoxy equivalent of 180 to 3,800.

[0004b] In a second aspect of the present disclosure, there is provided a method of forming a coating film, comprising applying the aqueous coating composition as defined herein onto a substrate surface to form a coating film.

Problem to be solved by the Invention

[0005] The present invention has been made to solve the conventional problem, and an object of the present invention is to provide an aqueous coating composition which is excellent in low-temperature curability and capable of forming a coating film excellent in corrosion resistance.

Means for solving the Problems

[0006] An aqueous coating composition according to an embodiment of the present invention includes: (A) an aqueous epoxy-based polyamine resin having one or more primary amino groups and/or secondary amino groups in a molecule; (B) a compound having one or more (meth)acryloyl groups in a molecule; and (C) an alkoxysilane compound; wherein: an equivalent ratio of an amino group of the aqueous epoxy-based polyamine resin (A) and a (meth)acryloyl group of the compound (B) ((meth)acryloyl group/amino group) is 0.7 to 2.5; and a content of the alkoxysilane compound (C) in a solid content of the aqueous coating composition is 0.2