CLAIMS

1. An adhesive composition for forming an adhesive layer to be in contact with a resin on a surface of a metal, comprising:

a low molecular weight organic compound having two or more nitrogen atoms in one molecule, wherein the low molecular weight organic compound is a compound having at least one of an aromatic ring and a nitrogen-containing heterocyclic ring; and

at least one trivalent aluminum ion,

wherein the resin is a curable resin, and the adhesive composition is an aqueous solution having a pH of 12 or less and has a concentration of the low molecular weight organic compound of 0.01 to 150 g/L and a molar concentration of the at least one trivalent aluminum ion of 0.005 to 100 mmol/L,

wherein the total percentage of the low molecular weight organic compound and the trivalent aluminum ion source is 50 wt% or more in the solid content of the adhesive composition.

2. A method for producing a surface-treated metal member, comprising the step of:

bringing a member having a surface of a metal into contact with the adhesive composition according to claim 1 to form an adhesive layer on the surface.

3. A method for producing a metal-resin composite body, comprising the step of:

bonding a resin member onto an adhesive layer of a surface-treated metal member obtained by the method for producing a surface-treated metal member according to claim 2.

4. The adhesive composition according to claim 1, wherein the total percentage of the low molecular weight organic compound and the trivalent aluminum ion source is 70 wt% or more in the solid content of the adhesive composition.

5. The adhesive composition according to claim 1, wherein the total percentage of the low molecular weight organic compound and the trivalent aluminum ion source is 80 wt% or more in the solid content of the adhesive composition.

6. The adhesive composition according to claim 1, wherein the total percentage of the low molecular weight organic

compound and the trivalent aluminum ion source is 90 wt% or more in the solid content of the adhesive composition.

7. The adhesive composition according to claim 1, wherein the total percentage of the low molecular weight organic compound and the trivalent aluminum ion source is 95 wt% or more in the solid content of the adhesive composition.