Claims

1. An electrically conductive adhesive film comprising:

a metal particle (P);

a resin (M); and

at least one of an organic phosphine (A) represented by the general formula (1) below and a sulfide-based compound (B) represented by the general formula (2) below,

wherein the resin (M) comprises a thermosetting resin (M1),

the thermosetting resin (M1) comprises a maleic acid imide compound including two or more units of an imide group in a single molecule,

the metal particle (P) is a mixture comprising the first metal particle (P1) and a second metal particle (P2) that is based on a metal component different from the first metal particle (P1) and comprises a metal component capable of forming an intermetallic compound together with the first metal particle (P1),

the first metal particle (P1) is made of a single metal selected from the group of copper, nickel, aluminum and tin or an alloy comprising two or more metals selected from said group,

the second metal particle (P2) is made of a single metal selected from the group of copper, nickel, aluminum, tin, zinc, titanium, silver, gold, indium, bismuth, gallium and palladium or an alloy comprising two or more metals selected from said group, and

the electrically conductive adhesive film has a storage elastic modulus at 1 Hz measured in a state after sintering of 20 GPa or less and a thermal weight loss ratio when heated for 2 hours at 250 °C under a nitrogen atmosphere of less than 1 %:

[Chemical formula 1]





in the general formulas (1) and (2), each R independently represents an organic group, and R may be the same or different with each other.

2. The electrically conductive adhesive film according to claim 1, wherein at least one R in each of the general formulas (1) and (2) is an aryl group.

3. The electrically conductive adhesive film according to claim 1 or 2, wherein, in the general formulas (1) and (2), each R independently comprises, in its moiety, one or more group selected from a vinyl group, an acrylic group, a methacrylic group, a maleic acid ester group, a maleic acid amide group, a maleic acid imide group, a primary amino group, a secondary amino group, a thiol group, a hydrosilyl group, a hydroboron group, a phenolic hydroxyl group and an epoxy group.

4. The electrically conductive adhesive film according to any one of claims 1 to 3, wherein the organic phosphine (A) comprises p-styryl diphenyl phosphine.

5. The electrically conductive adhesive film according to any one of claims 1 to 4, wherein the sulfide-based compound (B) comprises at least one of bis(acryloylthiophenyl)sulfide and bis(methacryloylthiophenyl)sulfide.

6. The electrically conductive adhesive film according to any one of claims 1 to 5, wherein a loss tangent (tan δ) defined by a ratio (G″ / G′) of a loss elastic modulus (G″) to a storage elastic modulus (G′) at 60°C and 1 Hz in a B-stage state is 1.4 or higher.

7. The electrically conductive adhesive film according to any one of claim 1 to 6, wherein the thermosetting resin (M1) further comprises a phenol novolac resin.

8. A dicing-die bonding film, comprising the electrically conductive adhesive film according to any one of claims 1 to 7 adhered to a dicing tape.