Claims

1. A semiconductor substrate cleaning method comprising a step of removing an adhesive layer provided on a semiconductor substrate by use of a remover composition, wherein

the adhesive layer is a film formed by use of an adhesive composition which contains an adhesive component (S), and the adhesive component (S) comprises a siloxane adhesive containing a polyorganosiloxane component (A) which is curable through hydrosilylation;

the remover composition contains a solvent but no salt;

the solvent comprises one or more species selected from among an aliphatic hydrocarbon compound, an aromatic hydrocarbon compound, an ether compound, a thioether compound, an ester compound, and an amine compound, each having a molecular weight less than 160; and

the remover composition exhibits a contact angle smaller than 31.5° with respect to the adhesive layer.

2. A semiconductor substrate cleaning method according to claim 1, wherein the molecular weight is 70 or more.

3. A semiconductor substrate cleaning method according to claim 1, wherein the solvent comprises one or more species selected from among di(n-butyl) ether, n-decane, di(n-pentyl) ether, 1-amino-n-pentane, p-menthane, butyl acetate, cyclohexane, di(n-propyl) sulfide, pentyl acetate, di(n-butyl) sulfide, mesitylene, limonene, and p-cymene.

4. A semiconductor substrate cleaning method according to any one of claims 1 to 3, wherein the adhesive composition which contains an adhesive component (S) further comprises at least one species selected from among an acrylic resin adhesive, an epoxy resin adhesive, a polyamide adhesive, a polystyrene adhesive, a polyimide adhesive, and a phenolic resin adhesive.

5. A processed semiconductor substrate production method comprising:

a first step of producing a laminate having a semiconductor substrate, a support substrate, and an adhesive layer formed from an adhesive composition;

a second step of processing the semiconductor substrate of the produced laminate;

a third step of separating the semiconductor substrate and the adhesive layer from the support substrate; and

a fourth step of removing the adhesive layer on the semiconductor substrate by use of a remover composition, wherein

the adhesive layer is a film formed by use of an adhesive composition which contains an adhesive component (S), and the adhesive component (S) comprises a siloxane adhesive containing a polyorganosiloxane component (A) which is curable through hydrosilylation;

the remover composition contains a solvent but no salt;

the solvent comprises one or more species selected from among an aliphatic hydrocarbon compound, an aromatic

hydrocarbon compound, an ether compound, a thioether compound, an ester compound, and an amine compound, each having a molecular weight less than 160; and

the remover composition exhibits a contact angle smaller than 31.5° with respect to the adhesive layer.

6. A processed semiconductor substrate production method according to claim 5, wherein the molecular weight is 70 or more.

7. A processed semiconductor substrate production method according to claim 5, wherein the solvent comprises one or more species selected from among di(n-butyl) ether, n-decane, di(n-pentyl) ether, 1-amino-n-pentane, p-menthane, butyl acetate, cyclohexane, di(n-propyl) sulfide, pentyl acetate, di(n-butyl) sulfide, mesitylene, limonene, and p-cymene.

8. A processed semiconductor substrate production method according to any one of claims 5 to 7, wherein the adhesive component (S) further comprises at least one species selected from among an acrylic resin adhesive, an epoxy resin adhesive, a polyamide adhesive, a polystyrene adhesive, a polyimide adhesive, and a phenolic resin adhesive.

9. A remover composition for use in removal of an adhesive layer provided on a semiconductor substrate during cleaning the semiconductor substrate, wherein

the adhesive layer is a film formed by use of an adhesive composition which contains an adhesive component (S), and the adhesive component (S) comprises a siloxane

adhesive containing a polyorganosiloxane component (A) which is curable through hydrosilylation;

the composition contains a solvent comprises one or more species selected from among an aliphatic hydrocarbon compound, an aromatic hydrocarbon compound, an ether compound, a thioether compound, an ester compound, and an amine compound, each having a molecular weight less than 160;

the composition contains no salt; and

the composition exhibits a contact angle smaller than 31.5° with respect to the adhesive layer.

10. A remover composition according to claim 9, wherein the molecular weight is 70 or more.

11. A remover composition according to claim 9, wherein the solvent comprises one or more species selected from among di(n-butyl) ether, n-decane, di(n-pentyl) ether, 1-amino-n-pentane, p-menthane, butyl acetate, cyclohexane, di(n-propyl) sulfide, pentyl acetate, di(n-butyl) sulfide, mesitylene, limonene, and p-cymene.

12. A remover composition according to any one of claims 9 to 11, wherein the adhesive component (S) further comprises at least one species selected from among an acrylic resin adhesive, an epoxy resin adhesive, a polyamide adhesive, a polystyrene adhesive, a polyimide adhesive, and a phenolic resin adhesive.