Claims

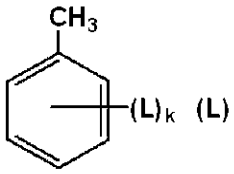
1. A semiconductor substrate cleaning method comprising a step of removing an adhesive layer provided on a semiconductor substrate by use of a remover composition, wherein

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; and

the solvent includes an organic solvent represented by formula (L):

[F1]



(wherein L represents a substituent to the benzene ring, and each of a plurality of Ls represents a C1 to C4 alkyl group; and k represents the number of Ls and is an integer of 0 to 5) in an amount of 80 mass% or more.

2. A semiconductor substrate cleaning method according to claim 1, wherein the solvent includes the organic solvent represented by formula (L) in an amount of 85 mass% or more.

3. A semiconductor substrate cleaning method according to claim 2, wherein the solvent is formed of the organic solvent represented by formula (L).

4. A semiconductor substrate cleaning method according to any one of claims 1 to 3, wherein L is a methyl group or an isopropyl group.

5. A semiconductor substrate cleaning method according to claim 1, wherein the organic solvent represented by formula (L) is at least one species selected from among toluene, mesitylene, p-cymene, and 1,2,4-trimethylbenzene.

6. A semiconductor substrate cleaning method according to any one of claims 1 to 5 above, 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.

7. 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,

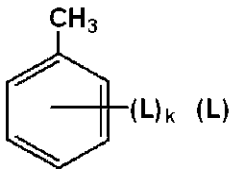
wherein

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; and

the solvent includes an organic solvent represented by formula (L):

[F2]



(wherein L represents a substituent to the benzene ring, and each of a plurality of Ls represents a C1 to C4 alkyl group; and k represents the number of Ls and is an integer of 0 to 5) in an amount of 80 mass% or more.

8. A processed semiconductor substrate production method according to claim 7, wherein the solvent includes the organic solvent represented by formula (L) in an amount of 85 mass% or more.

9. A processed semiconductor substrate production method according to claim 8, wherein the solvent is formed of the organic solvent represented by formula (L).

10. A processed semiconductor substrate production

method according to any one of claims 7 to 9, wherein L is a methyl group or an isopropyl group.

11. A processed semiconductor substrate production method according to claim 10, wherein the organic solvent represented by formula (L) is at least one species selected from among toluene, mesitylene, p-cymene, and 1,2,4-trimethylbenzene.

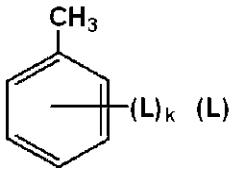
12. A processed semiconductor substrate production method according to any one of claims 7 to 11, wherein the adhesive component (S) further comprises at least one species selected from among an acrylic resin adhesive, an epoxy resin adhesive, a polyamide adhesive, a polystyrene adhesive, a polyimide adhesive, and a phenolic resin adhesive.

13. A remover composition for use in removal of an adhesive layer provided on a semiconductor substrate during cleaning the semiconductor substrate, which composition contains a solvent but no salt, 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 solvent includes an organic solvent represented by formula (L):

[F3]



(wherein L represents a substituent to the benzene ring, and each of a plurality of Ls represents a C1 to C4 alkyl group; and k represents the number of Ls and is an integer of 0 to 5) in an amount of 80 mass% or more.

14. A remover composition according to claim 13, wherein the solvent includes the organic solvent represented by formula (L) in an amount of 85 mass% or more.

15. A remover composition according to claim 14, wherein the solvent is formed of the organic solvent represented by formula (L).

16. A remover composition according to any one of claims 13 to 15, wherein L is a methyl group or an isopropyl group.

17. A remover composition according to claim 16, wherein the organic solvent represented by formula (L) is at least one species selected from among toluene, mesitylene, p-cymene, and 1,2,4-trimethylbenzene.

18. A remover composition according to any one of claims 13 to 17, 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.