CLAIMS

1. A pressure-sensitive adhesive tape set comprising:

at least one pressure-sensitive adhesive tape for semiconductor wafer fabrication constituted with a first laminate including a sheet-shaped first base material containing a resin material and a first pressure-sensitive adhesive layer laminated on the first base material; and

at least one pressure-sensitive adhesive tape for semiconductor element transport constituted with a second laminate including a sheet-shaped second base material containing a resin material and a second pressure-sensitive adhesive layer laminated on the second base material,

wherein a contact angle of hexadecane with respect to the first pressure-sensitive adhesive layer is equal to or greater than 10°, and

a contact angle of hexadecane with respect to the second pressure-sensitive adhesive layer is less than 10°.

2. The pressure-sensitive adhesive tape set according to claim 1,

wherein provided that the contact angle of hexadecane with respect to the first pressure-sensitive adhesive layer is A[°], and the contact angle of hexadecane with respect to the second pressure-sensitive adhesive layer is B[°], A and B satisfy a

relationship of 20° ≤ A − B.

3. The pressure-sensitive adhesive tape set according to claim 1 or 2,

wherein a contact angle of pure water with respect to the first pressure-sensitive adhesive layer is equal to or less than 90°, and

a contact angle of pure water with respect to the second pressure-sensitive adhesive layer is greater than 90°.

4. The pressure-sensitive adhesive tape set according to any one of claims 1 to 3,

wherein the second pressure-sensitive adhesive layer contains a surfactant.

5. The pressure-sensitive adhesive tape set according to any one of claims 1 to 4,

wherein the pressure-sensitive adhesive tape for semiconductor wafer fabrication is used for obtaining a plurality of semiconductor elements formed by singulating a semiconductor wafer bonded to the pressure-sensitive adhesive tape for semiconductor wafer fabrication, and

the pressure-sensitive adhesive tape for semiconductor element transport is used for rearranging, moving and storing each of the semiconductor elements picked up from the

pressure-sensitive adhesive tape for semiconductor wafer fabrication.

6. The pressure-sensitive adhesive tape set according to claim 5,

wherein each semiconductor element picked up from the pressure-sensitive adhesive tape for semiconductor wafer fabrication is bonded to the second pressure-sensitive adhesive layer included in the pressure-sensitive adhesive tape for semiconductor element transport, in a state where a portion of the first pressure-sensitive adhesive layer remains on a side of a surface of the semiconductor element having been in contact with the first pressure-sensitive adhesive layer.

7. A pressure-sensitive adhesive tape for semiconductor element transport which is used for fixing semiconductor elements and constituted with a laminate, the laminate including a sheet-shaped base material containing a resin material and a pressure-sensitive adhesive layer laminated on the base material,

wherein the semiconductor elements are fixed to the pressure-sensitive adhesive tape for semiconductor element transport through a side of a non-circuit-formed surface thereof on which no circuit is formed,

a resin material having pressure-sensitive adhesiveness,

which is derived from a pressure-sensitive adhesive tape for semiconductor wafer fabrication having been used for fixing a semiconductor wafer, is attached to the non-circuit-formed surface when the semiconductor elements are obtained by singulating the semiconductor wafer, and

provided that a contact angle of hexadecane with respect to the non-circuit-formed surface, to which the resin material derived from the pressure-sensitive adhesive tape for semiconductor wafer fabrication is attached, is H[°] and a contact angle of hexadecane with respect to the pressure-sensitive adhesive layer included in the pressure-sensitive adhesive tape for semiconductor element transport is B[°], H and B satisfy a relationship of $20° \leq H - B$.

8. The pressure-sensitive adhesive tape for semiconductor element transport according to claim 7,

wherein the contact angle H of hexadecane with respect to the non-circuit-formed surface, to which the resin material derived from the pressure-sensitive adhesive tape for semiconductor wafer fabrication is attached, is equal to or greater than 10°.

9. The pressure-sensitive adhesive tape for semiconductor element transport according to claim 7 or 8,

wherein the contact angle B of hexadecane with respect to the pressure-sensitive adhesive layer included in the pressure-sensitive adhesive tape for semiconductor element transport is less than 10°.

10. The pressure-sensitive adhesive tape for semiconductor element transport according to any one of claims 7 to 9,

wherein provided that a contact angle of pure water with respect to the non-circuit-formed surface, to which the resin material derived from the pressure-sensitive adhesive tape for semiconductor wafer fabrication is attached, is I[°] and a contact angle of pure water with respect to the pressure-sensitive adhesive layer included in the pressure-sensitive adhesive tape for semiconductor element transport is D[°], I and D satisfy a relationship of 55° ≤ D − I.

11. The pressure-sensitive adhesive tape for semiconductor element transport according to any one of claims 7 to 9,

wherein a contact angle I of pure water with respect to the non-circuit-formed surface, to which the resin material derived from the pressure-sensitive adhesive tape for semiconductor wafer fabrication is attached, is equal to or less

than 50°.

12. The pressure-sensitive adhesive tape for semiconductor element transport according to any one of claims 7 to 9,

wherein a contact angle D of pure water with respect to the pressure-sensitive adhesive layer included in the pressure-sensitive adhesive tape for semiconductor element transport is greater than 90°.

13. The pressure-sensitive adhesive tape for semiconductor element transport according to any one of claims 7 to 12,

wherein the pressure-sensitive adhesive layer included in the pressure-sensitive adhesive tape for semiconductor element transport contains a surfactant.