

CLAIMS

1. A laminate comprising:

a support substrate;

a semiconductor substrate having a bump on a side of the support substrate;

an inorganic material layer interposed between the support substrate and the semiconductor substrate and in contact with the semiconductor substrate; and

an adhesive layer formed of an adhesive composition, the adhesive layer interposed between the support substrate and the inorganic material layer and in contact with the support substrate and the inorganic material layer,

wherein the adhesive composition contains a component (A) which is cured and a polyorganosiloxane as a component (B) which does not cause a curing reaction and serves as a release agent component together with the component (A) which is cured,

wherein the laminate is used for an application in which the support substrate and the semiconductor substrate are separated from each other after processing of the semiconductor substrate in the laminate, and

an adhesive force between the inorganic material layer and the adhesive layer when the support substrate and the semiconductor substrate are separated from each other is smaller than an adhesive force between the inorganic material layer and the semiconductor substrate.

2. The laminate according to claim 1, wherein the component (A) is a component which is cured by a hydrosilylation reaction.

3. The laminate according to claim 1 or 2, wherein the component (A) contains:

a polyorganosiloxane (a1) having an alkenyl group having 2 to 40 carbon atoms bonded to a silicon atom;

a polyorganosiloxane (a2) having a Si-H group; and

a platinum group metal-based catalyst (A2).

4. The laminate according to any one of claims 1 to 3, wherein the component (B) is a polydimethylsiloxane which may be modified.

5. The laminate according to any one of claims 1 to 4, wherein the inorganic material layer is a layer obtained by plasma-polymerizing an organosilicon compound on the semiconductor substrate.

6. A method of manufacturing a semiconductor substrate, the method comprising:

processing the semiconductor substrate in the laminate according to any one of claims 1 to 5;

separating the support substrate and the processed semiconductor substrate from each other by separating the inorganic material layer and the adhesive layer from each other; and

removing the inorganic material layer.

7. The method of manufacturing a semiconductor substrate according to claim 6, wherein the processing includes polishing a surface of the semiconductor substrate opposite to a surface on which the bump exists to thin the semiconductor substrate.

8. A method of manufacturing the laminate according to any one of claims 1 to 5, the method comprising:

forming the inorganic material layer on a surface of the semiconductor substrate on which the bump exists;

forming an adhesive coating layer which provides the adhesive layer on the inorganic material layer;

forming the adhesive layer by heating the adhesive coating layer in a state where the support substrate and the adhesive coating layer are in contact with each other and the adhesive coating layer and the inorganic material layer are in contact with each other.