CLAIMS

1. An adhesive sheet for back grinding of a semiconductor wafer having a convex part, comprising: a base material layer; and an adhesive layer provided on the base material layer, wherein:

the adhesive layer comprises an opening part having a diameter smaller than a diameter of the semiconductor wafer;

the adhesive layer is adhered to an outer peripheral part of the semiconductor wafer so that the convex part of the semiconductor wafer is placed in the opening part;

the adhesive layer is configured so that the convex part is protected by the base material layer with the semiconductor wafer adhered to the adhesive layer;

the base material layer comprises a cushion layer and a surface treatment layer provided thereon;

the adhesive layer is provided on the surface treatment layer;

the surface treatment layer is formed of an acrylic resin composition containing an acrylic resin;

the acrylic resin is cross-linked by light irradiation or heating; and

the adhesive layer is formed of an acrylic resin composition containing an acrylic resin.

2. The adhesive sheet of Claim 1, wherein a storage modulus of the surface treatment layer at 180°C is 1.0×10^{4} Pa to 1.0×10^{8} Pa.

3. The adhesive sheet of Claim 1 or 2, wherein the convex part is protected by being embedded in the base material layer.

4. The adhesive sheet of any one of Claims 1 to 3, wherein the semiconductor wafer is adhered to the adhesive layer under reduced pressure.

5. The adhesive sheet of any one of Claims 1 to 4, wherein an adhesive force measured in accordance with JIS Z0237 at 23°C between the base material layer and the semiconductor wafer after heating the semiconductor wafer to which the base material layer of a test piece cut from the adhesive sheet is adhered for 1 minute at 100°C and cooling to room temperature is lower than 6 N/200 mm.

6. A method for manufacturing a semiconductor wafer using the adhesive sheet of any one of Claims 1 to 5, comprising: a frame adhering step; a wafer adhering step; a heating step; a cutting step; a resin curing step; and a grinding step, wherein:

in the frame adhering step, the adhesive sheet is adhered to a ring frame;

in the wafer adhering step, the adhesive sheet is adhered to the outer peripheral part of the semiconductor wafer under reduced pressure, the outer peripheral part on a surface of the semiconductor wafer where the convex part is provided;

in the heating step, the base material layer is heated;

in the cutting step, the adhesive sheet is cut along an outer periphery of the semiconductor wafer;

in the resin curing step, the base material layer is brought in contact with a curable resin after the wafer adhering step, and the curable resin is cured in that state; and

in the grinding step, a backside of the semiconductor wafer is ground.

7. A base material sheet, comprising: a cushion layer; and a surface treatment layer provided thereon, wherein:

the surface treatment layer is formed of an acrylic resin composition containing an acrylic resin; and

the acrylic resin is cross-linked by light irradiation or heating.

8. The base material sheet of Claim 7, wherein a storage modulus of the surface treatment layer at 180°C is 1.0×10^{4} Pa to 1.0×10^{8} Pa.