CLAIMS

1. A temporary protective film for semiconductor sealing molding, the temporary protective film comprising a support film; and an adhesive layer provided on the support film and containing an acrylic rubber,

wherein a solid shear modulus at 200°C of the temporary protective film is 5.0 MPa or higher.

2. The temporary protective film for semiconductor sealing molding according to claim 1, wherein the adhesive layer further contains a peelability imparting agent.

3. The temporary protective film for semiconductor sealing molding according to claim 2, wherein a content of the peelability imparting agent is more than or equal to 6 parts by mass and less than 60 parts by mass with respect to 100 parts by mass of the acrylic rubber.

4. The temporary protective film for semiconductor sealing molding according to claim 1 wherein a thickness of the adhesive layer is from 1 μm to 5 μm.

5. The temporary protective film for semiconductor sealing molding according to claim 1, wherein the support film is a polyimide film.

6. The temporary protective film for semiconductor sealing molding according to claim 1, wherein the acrylic rubber is a copolymer including at least one monomer unit selected from the group consisting of butyl (meth)acrylate, ethyl (meth)acrylate, methyl (meth)acrylate, (meth)acrylic acid, acrylonitrile, 2-hydroxyethyl (meth)acrylate, and glycidyl (meth)acrylate.

7. The temporary protective film for semiconductor sealing molding according to claim 1, wherein a weight average molecular weight of the acrylic rubber is from 450,000 to 900,000.

8. The temporary protective film for semiconductor sealing molding according to claim 1, wherein the adhesive layer has pressure-sensitive adhesiveness at 24°C.

9. The temporary protective film for semiconductor sealing molding according to claim 1, wherein the 5% weight reduction temperature of the temporary protective film is 350°C or higher.

10. The temporary protective film for semiconductor sealing molding according to claim 1, further comprising a cover film provided on a surface of the adhesive layer, the surface being on the opposite side of the surface having the support film provided thereon.

11. A temporary protective film-attached lead frame comprising:

a lead frame having a die pad and an inner lead; and

the temporary protective film for semiconductor sealing molding according to claim 1,

wherein the temporary protective film is attached to the lead frame such that the adhesive layer of the temporary protective film comes into contact with one surface of the lead frame.

12. A temporary protective film-attached sealing molded body comprising:

a lead frame having a die pad and an inner lead;

a semiconductor element mounted on the die pad;

a wire connecting the semiconductor element and the inner lead;

a sealing layer sealing the semiconductor element and the wire;

and

the temporary protective film for semiconductor sealing molding according to claim 1,

wherein the temporary protective film is attached such that the adhesive layer of the temporary protective film is attached to a surface of the lead frame,the surface of the lead frame to which the adhesive layer of the temporary protective film is attached being on the opposite side of the lead frame from the surface of the lead frame having the semiconductor element mounted thereon.

13. A method for producing a semiconductor device, the method comprising, in the following order:

attaching the temporary protective film for semiconductor sealing molding according to claim 1 to one surface of a lead frame having a die pad and an inner lead in a direction of the adhesive layer coming into contact with the lead frame;

mounting a semiconductor element on a surface of the die pad on the opposite side of the lead frame from the one surface to which the adhesive layer of the temporary protective film is attached;

providing a wire for connecting the semiconductor element and the inner lead;

forming a sealing layer for sealing the semiconductor element and the wire, and thereby obtaining a sealing molded body having the lead frame, the semiconductor element, and the sealing layer; and

peeling off the temporary protective film from the sealing molded body.

14. The method according to claim 13, wherein

the lead frame has a plurality of the die pads, the semiconductor element is mounted on each of the multiple die pads, and

the method further comprises dividing the sealing molded body before or after the temporary protective film is peeled off from the sealing molded body, and thereby obtaining a semiconductor device having one die pad and one semiconductor element described above.