CLAIMS

[Claim 1]

A pressure sensitive adhesive tape for work processing, which is used to attach to a surface of the work having irregularities formed on the surface, comprising: a substrate and a pressure sensitive adhesive layer provided on one surface side of the substrate,

wherein the pressure sensitive adhesive layer comprises a urethane-based resin (A) and an energy ray-curable compound (B); and the energy ray-curable compound (B) is non-reactive with the urethane-based resin (A), has a photopolymerizable unsaturated bond, and has a molecular weight of 35,000 or lower.

[Claim 2]

The pressure sensitive adhesive tape for work processing according to claim 1, wherein the energy ray-curable compound (B) is at least one selected from the group consisting of (meth)acrylate monomers (B1) and urethane (meth)acrylates (B2).

[Claim 3]

The pressure sensitive adhesive tape for work processing according to claim 2, wherein the energy ray-curable compound (B) comprises at least a (meth)acrylate monomer (B1); and the (meth)acrylate monomer (B1) is a polyfunctional (meth)acrylate ester being a complete ester of a polyhydric alcohol with (meth)acrylic acid.

[Claim 4]

The pressure sensitive adhesive tape for work processing according to any one of claims 1 to 3, wherein the energy ray-curable compound (B) is bi- or more functional in terms of (meth)acryloyl group in one molecule thereof.

[Claim 5]

The pressure sensitive adhesive tape for work processing according to any one of claims 1 to 4, wherein the urethane-based resin (A) has a photopolymerizable unsaturated bond.

[Claim 6]

The pressure sensitive adhesive tape for work processing according to any one of claims 1 to 5, wherein an amount of the energy ray-curable compound (B) is 1 to 4.7 parts by mass with respect to 100 parts by mass of the urethane-based

resin (A).

[Claim 7]

The pressure sensitive adhesive tape for work processing according to any one of claims 1 to 6, wherein the pressure sensitive adhesive layer is formed of a pressure sensitive adhesive composition comprising, at least, a urethane polymer (A'), the energy ray-curable compound (B), and a crosslinking agent (C); and

the urethane-based resin (A) is obtained by crosslinking the urethane polymer (A') with the crosslinking agent (C).

[Claim 8]

The pressure sensitive adhesive tape for work processing according to claim 7, wherein the crosslinking agent (C) comprises a crosslinking agent (C1) having a photopolymerizable unsaturated bond.

[Claim 9]

The pressure sensitive adhesive tape for work processing according to claim 7 or 8, wherein the urethane polymer (A') and the crosslinking agent (C) are bonded through a urethane bond.

[Claim 10]

The pressure sensitive adhesive tape for work processing according to any one of claims 7 to 9, wherein an amount of the urethane polymer (A') in the pressure sensitive adhesive composition is 30 to 85 % by mass.

[Claim 11]

The pressure sensitive adhesive tape for work processing according to any one of claims 7 to 10, wherein the pressure sensitive adhesive composition further comprises a compound (D) having a photopolymerizable unsaturated bond and a reactive functional group reactive with the crosslinking agent (C).

[Claim 12]

The pressure sensitive adhesive tape for work processing according to claim 11, wherein the compound (D) is a polyfunctional (meth)acrylate ester being a partial ester of a polyhydric alcohol with (meth)acrylic acid.

[Claim 13]

The pressure sensitive adhesive tape for work processing according to any one of claims 1 to 12, wherein the pressure sensitive adhesive layer after energy ray irradiation has a breaking stress of 2.5 MPa or higher.

[Claim 14]

The pressure sensitive adhesive tape for work processing according to any

one of claims 1 to 13, wherein a middle layer is provided between the substrate and the pressure sensitive adhesive layer.

[Claim 15]

The pressure sensitive adhesive tape for work processing according to claim 14, wherein the middle layer has a thickness of 10 to 600 μm.

[Claim 16]

The pressure sensitive adhesive tape for work processing according to claim 14 or 15, wherein the middle layer has a loss tangent at 50°C of 1.0 or higher as measured at a frequency of 1 Hz.

[Claim 17]

The pressure sensitive adhesive tape for work processing according to any one of claims 1 to 16, wherein the pressure sensitive adhesive layer does not contain acrylic adhesive.

[Claim 18]

The pressure sensitive adhesive tape for work processing according to any one of claims 1 to 17, wherein the pressure sensitive adhesive tape after energy ray irradiation has a peel strength of 2,000 mN/25 mm or lower.

[Claim 19]

The pressure sensitive adhesive tape for work processing according to any one of claims 1 to 18, wherein the pressure sensitive adhesive tape is used for protecting a semiconductor wafer surface.