propylureido)propyltriethoxysilane, 3-(3-butylureido)propyltriethoxysilane, 3-(3-hexylureido)propyltriethoxysilane, 3-(3-phenylureido)propyltrimethoxysilane, 3-(3-methylureido)propyltrimethoxysilane, 3-(3-ethylureido)propyltrimethoxysilane, 3-(3-propylureido)propyltrimethoxysilane, 3-(3-butylureido)propyltrimethoxysilane, and 3-(3-hexylureido)propyltrimethoxysilane.

[0031] Examples of the silane coupling agent in which X is the group represented by Formula (IIe) include 3-glycidoxypropyltrimethoxysilane, 3-glycidoxypropylmethyldimethoxysilane, 3-glycidoxypropyltriethoxysilane, and 3-glycidoxypropylmethyldiethoxysilane.

[0032] The content of the coupling agent may be 1 to 40 parts by mass with respect to 100 parts by mass of the content of the thermoplastic resin. When the content of the silane coupling agent is 1 parts by mass or more, there is a tendency that peelability from the lead frame after the thermal treatment is further improved. When the content of the coupling agent is 40 parts by mass or less, gelation of the varnish for forming the adhesive layer 2, a decrease in viscosity, and the like are less likely to occur, and the temporary protective film can be more easily produced. From the same viewpoint, the content of the coupling agent may be 1 to 35 parts by mass, 2 to 35 parts by mass, 3 to 30 parts by mass, more than 5 parts by mass and 35 parts by mass or less, more than 5 parts by mass

and 30 parts by mass or less, or more than 5 parts by mass and 20 parts by mass or less, with respect to 100 parts by mass of the content of the thermoplastic resin.

[0033] The adhesive layer 2 may further contain a filler. Examples of the filler include ceramic powder, glass powder, silver powder, copper powder, resin particles, and rubber particles. The content of the filler may be 0 to 30 parts by mass, 1 to 30 parts by mass, or 5 to 15 parts by mass with respect to 100 parts by mass of the content of the thermoplastic resin.

[0034] The total content of the thermoplastic resin, the low-molecular-weight component, and the coupling agent, or the total content of the thermoplastic resin, the low-molecular-weight component, the coupling agent, and the filler in the adhesive layer 2 may be 90 to 100% by mass on the basis of the mass of the adhesive layer 2.

[0035] The thickness of the adhesive layer 2 may be 20 μm or less, 18 μm or less, 16 μm or less, 14 μm or less, 12 μm or less, 10 μm or less, 9 μm or less, or 8 μm or less, from the viewpoint of more easily suppressing the curling of the temporary protective film. The thickness of the adhesive layer 2 may be 1 μm or more, 2 μm or more, 3 μm or more, 4 μm or more, 5 μm or more, 6 μm or more, 7 μm or more, or 8 μm or more. The thickness of the adhesive layer 2 may be 1 μm or more and 20 μm or less.

[0036] The support film 1 may be, for example, a film of at least one polymer selected from the group consisting of an aromatic polyimide, an aromatic polyamide, an aromatic polyamideimide, an aromatic polysulfone, an aromatic polyethersulfone, a polyphenylene sulfide, an