

## Abstract

Provided is a technique suitable for multilayering thin semiconductor elements via adhesive bonding while avoiding wafer damage in a method of manufacturing a semiconductor device, the method in which semiconductor elements are multilayered through laminating wafers in which the semiconductor elements are fabricated. The method of the present invention includes bonding and removing. In the bonding step, a back surface 1b side of a thinned wafer 1T in a reinforced wafer 1R having a laminated structure including a supporting substrate S, a temporary adhesive layer 2, and the thinned wafer 1T is bonded via an adhesive to an element forming surface 3a of a wafer 3. A temporary adhesive for forming the temporary adhesive layer 2 contains a polyvalent vinyl ether compound, a compound having two or more hydroxy groups or carboxy groups and thus capable of forming a polymer with the polyvalent vinyl ether compound, and a thermoplastic resin. The adhesive contains a polymerizable group-containing polyorganosilsesquioxane. In the removing step, a temporary adhesion by the temporary adhesive layer 2 between the supporting substrate S and the thinned wafer 1T is released to remove the supporting substrate S.