

Abstract

HIGH TEMPERATURE ELECTROSTATIC CHUCK BONDING ADHESIVE

Methods and apparatus for bonding an electrostatic chuck to a component of a substrate support are provided herein. In some embodiments, an adhesive for bonding components of a substrate support may include a matrix of silicon-based polymeric material having a filler dispersed therein. The silicon based polymeric material may be a polydimethylsiloxane (PDMS) structure having a molecular weight with a low molecular weight (LMW) content Σ D3 - D10 of less than about 500 ppm. In some embodiments, the filler may comprise between about 50 to about 70 percent by volume of the adhesive layer. In some embodiments, the filler may comprise particles of aluminum oxide (Al₂O₃), aluminum nitride (AlN), yttrium oxide (Y₂O₃), or combinations thereof. In some embodiments, the filler may comprise particles having a diameter of about 10 nanometers to about 10 microns.

[Figure. 2]