FILM ADHESIVE FOR SEMICONDUCTOR VACUUM PROCESSING APPARATUS

ABSTRACT

A bonded assembly to reduce particle contamination in a semiconductor vacuum chamber such as a plasma processing apparatus is provided, including an elastomeric sheet adhesive bond between mating surfaces of a component and a support member to accommodate thermal stresses. The elastomeric sheet comprises a silicone adhesive to withstand a high shear strain of =800% at a temperature range between room temperature and 300°C such as heat curable high molecular weight dimethyl silicone with optional fillers. The sheet form has bond thickness control for parallelism of bonded surfaces. The sheet adhesive may be cut into pre-form shapes to conform to regularly or irregularly shaped features, maximize surface contact area with mating parts, and can be installed into cavities. Installation can be manually, manually with installation tooling, or with automated machinery. Composite layers of sheet adhesive having different physical properties can be laminated or coplanar.

Figure 1A