

CLAIMS

What is claimed is:

1. A composite article of low metal content, comprising:
 - (a) about 70 wt% to about 90 wt% of a thermoplastic polymer;
 - (b) 10 to about 30 wt-% of chopped carbon fiber;
 - (c) 0.001 to about 10 wt% of a sizing agent selected from the group consisting of polyvinyl alcohol, copolyvinyl alcohol, copolyvinyl acetate, copolyvinyl alcohol-acetate, and sodium carboxymethyl cellulose; ~~and optionally further comprising~~ (d) less than 2000 nanomoles₁ per gram of fiber₁ of sodium, potassium, calcium, and aluminum, combined.
2. The composite article of claim 1, wherein the thermoplastic polymer comprises copoly(tetrafluoroethylene-perfluoro[propylvinyl ether]).
3. The composite article of claim 1 or claim 2 having a coefficient of thermal expansion in the XY direction of about 10 ppm/K and a coefficient of thermal expansion in the Z direction which can be greater or less than in the XY direction.
4. The composite article of claim 1, 2, or 3, wherein the thermoplastic polymer (a), the chopped fiber (b), and the sizing agent (c) are a mixture present in the form of a densified matte.
5. Use of the composite article of any of claims 1 to 3 for equipment for semiconductor manufacture, in aircraft parts, in automotive parts, in gaskets, or in seals.
6. Use of the composite article of any one of claims 1 to 3 as a spin disk or chuck.
7. The use of claim 6, wherein the chuck is a spin chuck use in coater chambers to hold wafers.
8. The use of claim 6, wherein the chuck is a chemical polishing (CMP) chuck for holding wafers or polishing pads during a chemical mechanical polishing.