CLAIMS

1. A superabrasive product, comprising:

a base having an axis of rotation and a raised perimeter;

an abrasive segment only on the raised perimeter, the abrasive segment comprising:

a) a superabrasive grain component including at least one member selected from the group consisting of diamond, cubic boron nitride, zirconia and aluminum oxide; and

b) a porous continuous phase that includes a thermoplastic polymer component including at least one member selected from the group consisting of polyacrylonitrile, polyvinyledene, polystyrene, nylon, polyethylene, polypropylene and polymethylmethacrylate, wherein a ratio of the superabrasive grain component to the porous continuous phase of the superabrasive product is in a range of between 4:96 and 30:70 by volume , wherein the superabrasive product comprises a porosity that is an open porosity, and wherein the superabrasive grain component is distributed in the porous continuous phase.

2. The superabrasive product of Claim 1, wherein the porous continuous phase further includes a thermoset polymer component including at least one member selected from the group consisting of phenol-formaldehyde, polyamide, polyimide and epoxy-modified phenol-formaldehyde.

3. The superabrasive product of Claim 1, wherein the superabrasive is homogeneously distributed in the porous continuous phase.

4. The superabrasive product of Claim 1, wherein the thermoplastic polymer component includes polyacrylonitrile.

5. The superabrasive product of Claim 1, wherein the thermoplastic polymer includes polyvinyledene.

6. The superabrasive product of Claim 5, wherein the polyvinyledene includes polyvinyledene chloride.

7. The superabrasive product of Claim 1, wherein the thermoplastic polymer component includes polyacrylonitrile and polyvinyledene chloride.

8. The superabrasive product of Claim 2, wherein the thermoset polymer component includes phenol-formaldehyde.

9. The superabrasive product of Claim 8, wherein a ratio of the thermoplastic polymer component to the thermoset polymer component in the porous continuous phase is in a range of between 80:15 and 80:10 by volume.

10. The superabrasive product of Claim 9, wherein the superabrasive grain component has a number average particle size in a range of between 0.25 μm and 30 μm.

11. The superabrasive product of Claim 9, wherein the superabrasive product has a porosity in a range of between 30% and 80% by volume.

12. The superabrasive product of Claim 7, wherein a ratio of polyacrylonitrile to polyvinyledene chloride is in a range of between 1:1 and 98:2 by weight.