Superior Carbonaceous Solutions
For Polymer Applications

FormulaPT™ are carbon and graphitic powders, specifically developed by Superior Graphite for the Polymer market. Graphite is used in plastics as an additive mainly for improving tribological and conductive characteristics. FormulaPT™ product line includes synthetic and natural graphite powders in non-purified and thermally purified forms and our unique Resilient Graphitic Carbons (RGC™). FormulaPT™ products are used in a variety of applications including engineered and high performance thermoplastics, thermo set plastics, PTFE, and coatings.

**FormulaPT™ Benefits:**

**High Purity** - Electro-Thermal Treatment/Purification Technology removes virtually organic and inorganic impurities such as quartz, silica, and iron, which are abrasive and some are potentially corrosive.

**Chemical Stability** - No chemical interference with active materials.

**Increased Conductivity** - Provides excellent electrical and thermal conductivity.

**Increased Lubricity** - Lowers Coefficient of Friction (CoF) and our proprietary ‘Resilient Carbon’ fillers also reduce wear.

**FormulaPT™ Resolutions:**

**Concern** - In general, conventional graphites have limited contribution to the wear reduction at high load/stress conditions.

**Solution** - FormulaPT™, particularly the Resilient Graphitic Carbons (RGC™), significantly reduces wear rates under high load/stress conditions, in addition reducing CoF.

**Concern** - Not all purities of a substance are suitable for food contact, even if no specifications are listed in the Union list of the EU Food Contact Regulation.

**Solution** - To ensure the carbonaceous material is of suitable quality, Superior Graphite developed FormulaPT™ products, which provide extremely high purity with very low levels of unwanted elemental constituents.
FormulaPT™ Electro-Thermal Treatment/Purification removes unwanted elemental constituents

Consistent Purity Level Via Thermal Purification

FormulaPT™ RGC’s significantly reduce wear rates in addition to CoF

Tribological Performance of Resilient Fillers in PEEK

PEEK + 15% graphite: CoF and Ws at PV=1 (block on ring)
FormulaPT™ Tribological Performance

As part of the FormulaPT™ product line, RGC’s are unique graphitic materials manufactured by Superior Graphite using our proprietary Electro-Thermal Treatment /Purification Technology.

- After treatment, these products exhibit extremely high resiliency, lubricity, and purity
- The mechanical properties of the polymers, like tensile strength, are minimally affected while using RGC
- They are very effective in friction modification in advanced technology applications such as plain bearings, torque limiters, water meters and pumps
- A 5-15% addition of finer grade RGC™ has proven to improve wear resistance and Coefficient of Friction (CoF) in epoxy, PEEK, PAI, PA66, PPS and PI polymer composites
- To reduce the CoF, FormulaPT™ products are the best choice amongst the solid lubricants especially in wet, underwater or humid conditions

FormulaPT™ Food Contact

Superior Graphite uses its proprietary Electro-Thermal Treatment /Purification Technology, which exposes carbon and graphite precursor materials to temperatures approaching 3,000°C.

- The result is high carbon level products that are virtually free of impurities
- Removing elemental contaminants creates a highly ordered crystalline structure with exceptional purity and consistency increased resiliency, lubricity, and thermal and electrical conductivity
- FormulaPT™ thermally purified products are designed to meet EU-food contact regulation No. 10/2011
- Continuous processing technology, the only one in the industry, allows us to produce large quantities at a much faster pace and more cost-effectively than traditional batch processing

Our Mission:

We create value for our customers by providing SUPERIOR SOLUTIONS - utilizing our unique technologies, processes and talents - while contributing to the company’s long-term success.

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Printed in the U.S.A. • Rev. 6/2018