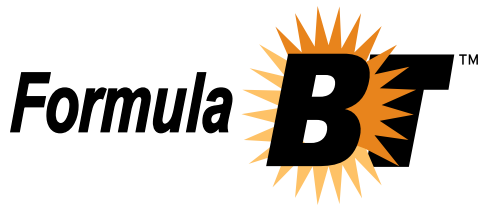


SUPERIOR  GRAPHITE

Formula ™





Electrical Conductive Additives in Various Battery Systems (Primary Alkaline, Lead Acid, Zn-Air, Li-ion batteries and others)

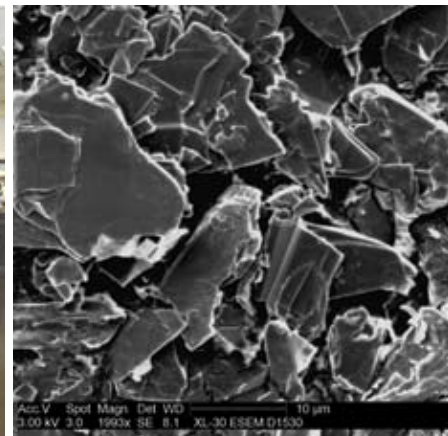
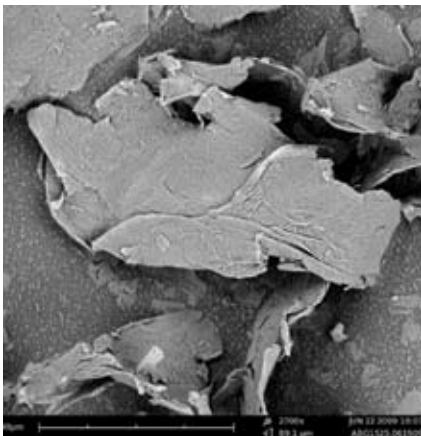
FormulaBT™ (Battery Technology) are carbon and graphite powders, developed and manufactured by Superior Graphite, primarily for use in the energy marketplace. **FormulaBT™** takes advantage of the unique continuous thermo-purification treatment patented by Superior Graphite. This continuous high temperature process exposes the raw materials, e.g. natural flake or vein graphite, synthetic graphite and other carbonaceous products to temperature up to 2700° C, so that impurities including inorganic contaminants are evaporized. Combined with a variety of milling and classification techniques/processes, **FormulaBT™** offers superior performance and high purity products.

FormulaBT™ Benefits:

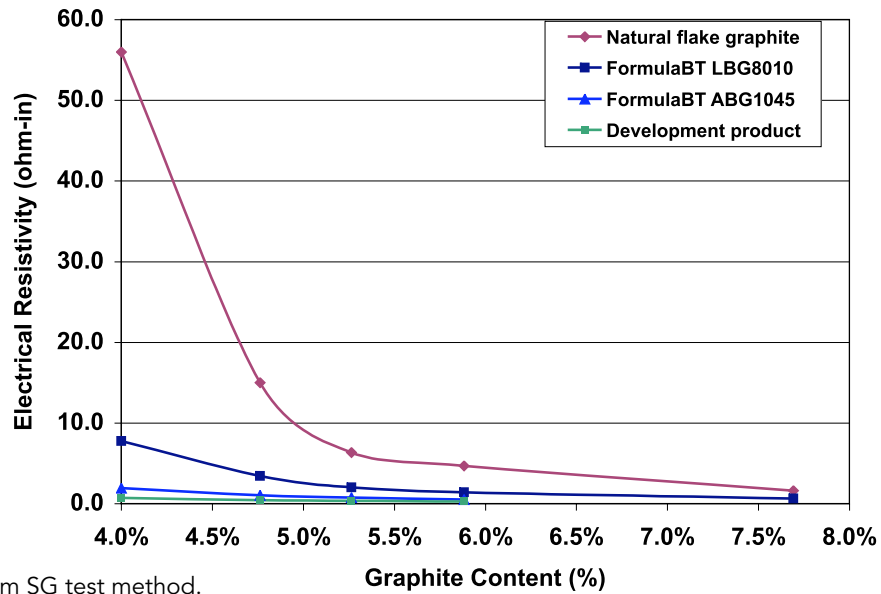
- **Excellent Electrical Conductivity** – Provides excellent electrical and thermal conductivity at lowest possible concentration of graphite in electrode systems.
- **High Lubricity** – Substantially reduce tool wear in the manufacturing process of the cathode rings.
- **Compressibility For High Mechanical Strength** – Provides the compressed electrodes outstanding mechanical stability and integrity.
- **Chemical Stability** – No chemical interference with active materials in the electrode mix, or with electrolytes.

FormulaBT™ Characteristics:

- **High Purity** – High consistent carbon content (>99.9%) with low moisture content, and extremely low impurities.)
- **High Crystallinity** – 100% crystallinity leads to excellent electrical conductivity, thermal conductivity and lubrication performance.
- **Defined Texture** – Advanced milling and processing technologies produce defined particle shape, surface area, and bulk density to maximize the electrical conductivity of electrodes.
- **Defined particle size distribution** – Predictability in performance and processability.

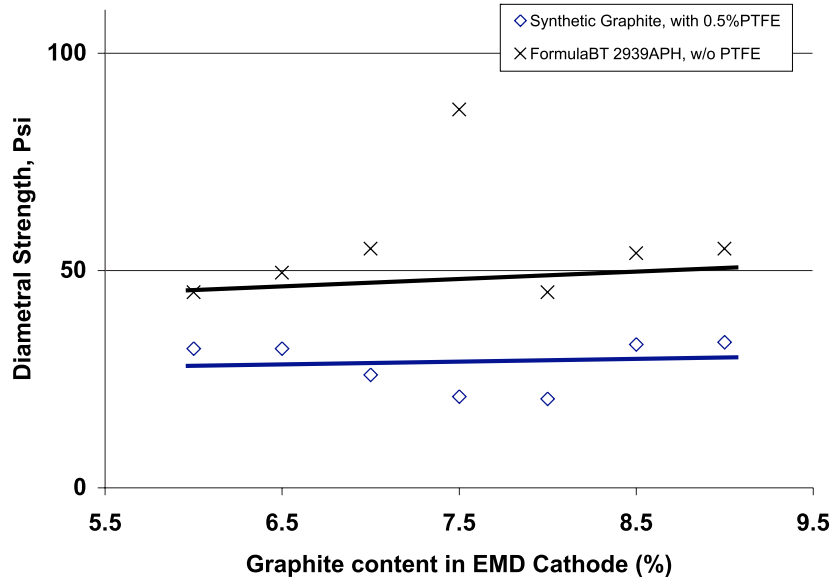


Electrical Resistivity of MnO₂/Graphite Mix as a Function of the Graphite Content

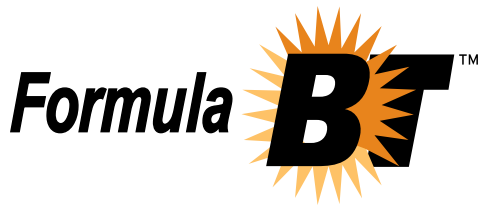


FormulaBT™ offers excellent electrical conductivity in electrode systems.

Mechanical Strength of MnO₂/Graphite Tablets



FormulaBT™ 2939APH significantly improved the strength of MnO₂ cathodes and eliminates binders.



FormulaBT™ Products

Electrical Conductive Additives in Various Battery Systems (Primary Alkaline, Lead Acid, Zn-Air, Li-ion batteries and others)

FormulaBT™ ABG series – High purity, expanded flake graphite powders, large surface area, various particle sizes. Outstanding electrical and thermal conductivity enhancer for various battery systems.

FormulaBT™ EBG series – High purity, co-processed expanded and natural flake graphite powders. Excellent electrical and thermal conductivity enhancer for various battery systems with great lubrication performance.

FormulaBT™ LBG series – High purity, natural flake graphite powders. Excellent electrical and thermal conductivity enhancer, various particle sizes down to 4 micron, well defined particle size distribution specially developed for battery and fuel cell applications. Very high compressibility and lubricating properties.

FormulaBT™ IGC series – Thermo-purified isotropic graphitic carbon, high degree of graphitization with to some extent isotropic structure. Excellent electrical and thermal conductivity additives.

FormulaBT™ 29xx series – Thermo-purified, natural flake graphite powders from 10 micron up to 800 micron. Conductivity additives, easy to compress, low tool wear.

FormulaBT™ PB205 series – Thermally graphitized carbon blacks with super high purity. Excellent electrical and thermal conductivity additives. Small particle size (aggregate particle size) down to 0.3 micron.

FormulaBT™ is more than just a high performance energy material. **FormulaBT™** is a philosophy:

- Our innovative research and development team provides superior solutions with customized products.
- Our dedicated production staff, combined with ISO9001 certified quality management systems ensure the high quality products and meet agreed-upon specifications.
- Our extensive worldwide distribution network ensures supply chain efficiency.
- Our materials management experts secure the supply of high quality raw materials, and continuously evaluate new sources globally.



Superior Graphite specializes in thermal purification, advanced sizing, blending, and coating technologies, providing value added graphite and carbon-based solutions globally.

Combining 93 years of experience and advanced technologies into every facet of the organization, a wide range of markets are served such as; agriculture, battery/fuel cells, ceramic armor, carbon parts, ferrous/nonferrous metallurgy, friction management, hot metal forming, polymer/composites, powder metals, lubricity, and performance drilling additives.

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