

CarboTherm™

Thermal Management Fillers

Improved Thermal Performance in a Wide Range of Applications

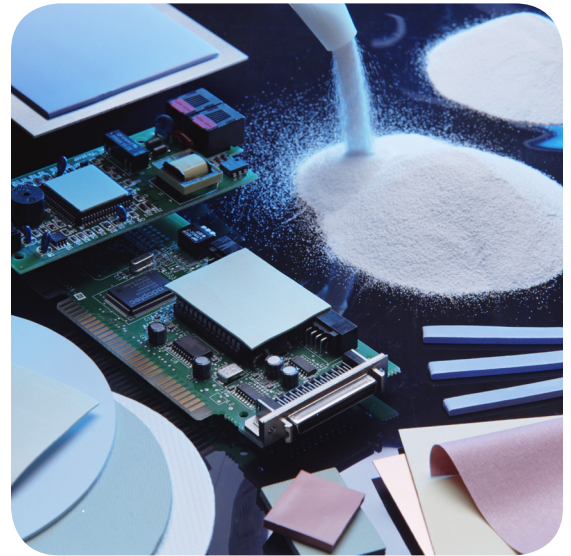
Whether designing power devices, printed circuit boards, or the next generation LEDs, heat build-up is most often the limiting factor. This combined with increasing demand to reduced device sizes while packed with more power is the reason driving the need for improved heat management tools.

Combining high thermal conductivity with excellent dielectric strength, CarboTherm™ thermal management fillers offer the most optimized solution for the hottest applications, making it an ideal choice for compounders of thermal interface materials.

CarboTherm powders, available in many particle sizes and distributions for product thicknesses from sub-micron to over 300 microns, in both standard commercial as well as custom grades, offer the widest range of agglomerates and platelets to fit the thermal management needs of a variety of applications.

Designed to improve the thermal performance of polymers in a wide range of applications, CarboTherm combines the unique thermal, chemical, mechanical and electrical properties of Boron Nitride with industry leading custom support from Saint-Gobain to offer optimized performance for your specific needs.

PRODUCT DATA SHEET



Features/Benefits

- High thermal conductivity for efficient heat dissipation from component assemblies
- Low density, light weight properties for higher filling and lower total cost of fillers
- Low dielectric constant for guaranteed performance of electronic devices
- High-lubricity reduces wear and tear of processing equipment
- Non-abrading properties enable gentle handling of critical electronic components
- Broad particle size distribution for standard as well as custom applications

Key Applications

- Printed Circuit Board – dielectric pre-preg and laminates
- Thermal Interface Materials – gap fillers, pads, underfills, encapsulants,
- Potting and Molding compounds
- Thermally conductive and dielectric thermoplastic polymers for housing, cases etc.

Target Markets

- Plastic Compounding
- Electronics Packaging
- High Frequency Power Devices
- Solid State / LED Lighting

BORON NITRIDE

SAINT-GOBAIN

CARBOTHERM™ THERMAL MANAGEMENT FILLERS – TYPICAL PROPERTIES

CarboTherm Products	Max. Particle Size Microns	Av. Particle Size Microns	Tap Density g/cc	Surface Area m ² /g
Platelets				
PCT-UFB	40	4	0.6	60
PCTP2	10	2	0.2	10
PCTF5	30	7	0.3	7
PCTP8	50	8	0.5	4
PCTL30	60	12	0.6	15
PCTP12	60	12	0.5	3
PCTP16	60	16	0.6	2
PCTP30	100	30	0.6	1
PCTP30D ²	1600	180	0.6	1
Low Density Agglomerates				
PCTL5MHF	100	80	0.4	3.2
PCTL7MHF	150	120	0.4	3.0
PCTL20MHF	500	250	0.4	3.0
High Density Agglomerates				
PCTH7MHF	150	100	0.8	2.5
PCTH10MHF	200	140	0.8	2.5
Spherical Powders				
CTS7M	180	120	0.5	3.5
CTS25M	500	300	0.4	3.5

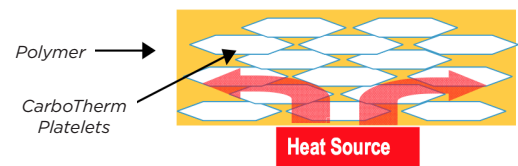
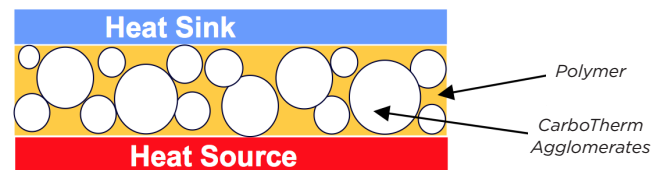
1. Typical properties, not to be used as product specification

2. Engineered for high shear mixing processes.

CARBOTHERM APPLICATION GUIDELINE

Comprised of BN crystals in a range of density / porosity, CarboTherm agglomerates (or granules) offer more efficient particle packing due to granular morphology and less interfacial resistance due to coarse low density grains, making it an ideal fit for applications that require through plane thermal conductivity utilizing low to moderate shear processing.

CarboTherm Platelets, on the other hand, with platy lamellar structure similar to graphite, tend to align with the direction of flow in polymer processing, making it best fit for heat spreading applications such as three dimensional injection molding thermoplastics utilizing high shear processing.



- CarboTherm Platelet Powders are well suited to thermoplastic polymers that utilize high shear processing and are often utilized in cost demanding applications.
- CarboTherm Low Density Agglomerated Powders are well suited to thermoset polymers that utilize low shear processing and provide isotropic thermal performance.
- CarboTherm High Density Agglomerated Powders are well suited to thermoset polymers that utilize moderate shear processing, provide isotropic thermal performance and enable high filler loadings.
- CarboTherm Spherical Powders are designed for thermoset polymers that utilize low shear processing where the highest thermal performance is required.

These recommendations are for general guideline only.

For further information, please visit us at

www.bn.saint-gobain.com, or contact your CarboTherm product specialist at bnsales@saint-gobain.com.



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