

3M™ Boron Nitride Cooling Fillers
for automotive applications

Thermally conductive fillers that maintain electrical insulation.

3M™ Boron Nitride Cooling Fillers can achieve high heat removal while helping designers solve multiple property requirements, enabling lighter, simpler component designs.

Applications

Thermally conductive materials are used throughout the vehicle, as heat removal is crucial in battery packs, electric motors, antennas, and electronics such as human machine interface.

To boost thermal conductivity, 3M™ Boron Nitride Cooling Fillers (3M BNCF) can be formulated into many different thermal management solutions, including TIM foils & pads, potting resins, adhesives, heat spreaders, gap fillers, and housings.

Redesign your TIMs

3M offers a full portfolio of BNCF additives for your application needs and come in several different form factors including Soft Agglomerates. In TIM foils & pads, due to their soft structure and purity, 3M BNCF Soft Agglomerates give the highest known through-plane conductivity and flexibility in the polymer matrix – enabling thin TIM designs.

Key benefits



Thermally Conductive



Electrically Insulating



Low Loss Factor



Low Density



Excellent Processability



Optical Quality & Reflectivity

Thermally Conductive Fillers Property Comparison

Compared to other thermally conductive fillers, 3M BNCF can achieve high heat removal while helping solve multiple property requirements with a single, lightweight filler.

	Silica	Minerals	Alumina	Boron Nitride
Thermal conductivity	●	●	●	●
Electrical insulation	●	●	●	●
Abrasiveness	●	●	●	●
Low frequency loss	●	●	●	●
Compound density @ 2W/mK	●	●	●	●
Compound tensile strength @ 2W/mK	-	●	●	●
Compound elong. at break @ 2W/mK	-	●	●	●
Compound viscosity @ 2W/mK	-	-	●	●

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