



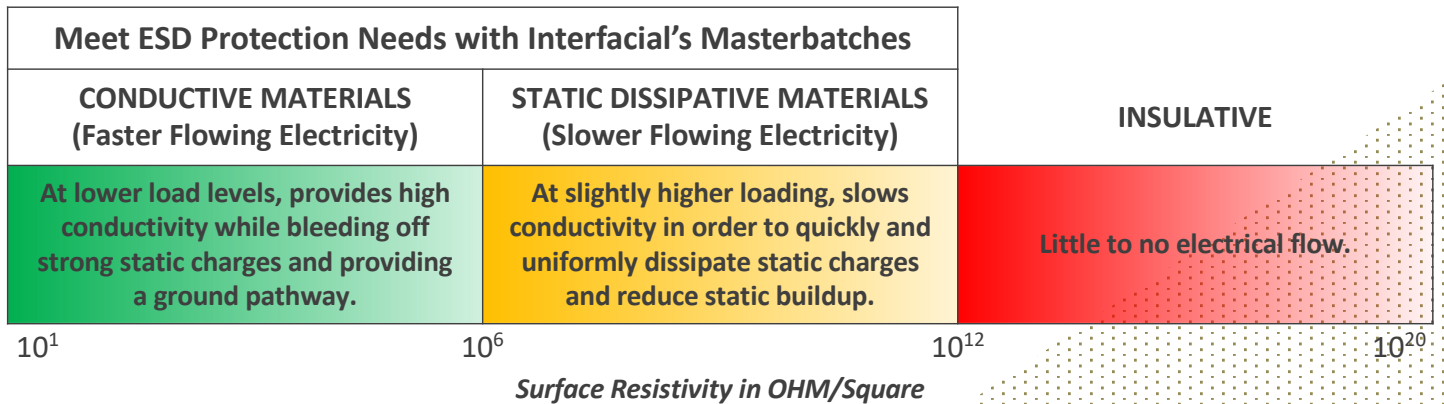
Series 6000 Highly Filled Carbon-based Polymer Masterbatches

Interfacial introduces its novel and proprietary 6000 Series Highly Filled Carbon Nanotube (CNT) Polymer Masterbatches. Based on its patented liquid dispersion technology, these conductive and statically dissipative plastic composites help to deliver superior electro-static discharge (ESD) protection in end-use applications. Compounds letdown from Interfacial’s carbon nanotube masterbatches require less CNT filler to achieve required ESD properties when compared to carbon black and carbon fiber fillers. These lower CNT fill levels help to retain more of the base polymer’s properties while at the same time reducing cost compared to the use of carbon black and carbon fiber fillers!



Product Description

Active Carbon nanotube polymer masterbatches dispersed at concentration levels of 15% by weight. The masterbatches are in pellet form and loaded with multi-wall carbon nanotubes (MWCNTs). They are suitable for twin screw extrusion letdown applications, and available in Polyamide (PA6), Polycarbonate (PC) and Polypropylene (PP) matrices.



Feature (Property)	Benefit
Safe/Clean Handling	Due to high polymer dispersion, it is easy-to-handle, clean and safe for workers during production.
Strength/Impact Resistance	Compared to high load levels of carbon black and carbon fiber to achieve conductive properties, has higher strength and impact resistance.
Nanoscale Size Hollow MWCNTs	Has an extremely high aspect ratio, which gives conductive properties at very low loadings (typically, 2-5 wt% active MWCNT levels).
Conductive/Static Dissipative	Leads to precise and uniform surface resistivity, which eliminates residual voltage (hot spots) found with a carbon fiber filled compound.
Improved Processing Characteristics	Material structures enable thin wall molds to fill at lower temperatures, elimination of isotropic effects and a wide processing latitude.
Low Specific Gravity	Lower specific gravity than other conductive carbon materials means MWCNT compounds are a weight saving alternative to higher density materials.

Carbon Composites – Comparison on Key Attributes	High Conductivity at Low Loadings	Uniform Conductivity (Reduced Hot Spots)	Low Specific Gravity (Lightweight)	Clean Handling	High Purity and Low Particulate Generation	Strength and Stiffness	Cost/Benefit
Carbon Nanotube (Interfacial)	+++	+++	+++	+++	+++	+++	++
Carbon Black	+	++	++	+	+	++	+



End-Use ESD Applications:

- Wafer reticle carriers
- Disk-drive components
- Scanner housings
- Fuel system components
- Mirror housings
- Door handles
- Wheel covers
- Electronic equipment
- Bumpers/fenders
- ESD Trays in electronic packaging
- Personal dust monitors
- Etc.

Commercially Available Series 6000 MWCNT Polymer Masterbatches

<u>Product</u>	<u>Description</u>
6001	15% Highly Filled Carbon Nanotube Filled Polyamide Masterbatch
6002	15% Highly Filled Carbon Nanotube Filled Polycarbonate Masterbatch
6003	15% Highly Filled Carbon Nanotube Filled Polypropylene Masterbatch

Need sample material for your development? Order at www.interfacial.tech

About Interfacial: Interfacial, a Nagase Company, is focused on the development and commercialization of technology platforms relating to advanced materials and manufacturing processes for the plastics, building and construction, electronics, automotive, recycling and specialty chemicals markets. Founded in 2015, Interfacial has 3 divisions – Development Services, Specialty Materials and Engineered Substrates – and currently employs a staff of 70. For more information, see www.ifllc.com.