Polymer

CNT Masterbatch

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CNT Masterbatch

QUICK FACTS

Product	:	Polymer CNT Masterbatch
Stock No	:	NS6130-12-001291
Appearance	:	Black Granules
Base Resin	:	Poly Propylene
CNT Concentration	:	25% MWCNT
Masterbatch Addition	:	30 Wt%
Electrical Conductivity	:	105 Ω

Carbon nanotubes have strong mechanical strength and ultralow density as well as the larger aspect ratio. A small amount of carbon nanotubes (CNTs) can enhance the mechanical strength of the polymer. Polymer nanocomposites are utilized carbon nanotubes (CNTs) due to the tremendous enhancement of the mechanical, thermal, electrical, optical and structural properties. The plastic nanocomposites utilized the carbon nanotubes because of the improvement of the thermal, electrical, and mechanical properties. This is owing to the unique combination of structural, electrical, mechanical, and thermal transport properties of CNTs. For the CNTS, polymer composite is the biggest application area. These nanocomposites are being utilized in various fields involving transportation, automotive, Energy sectors, aerospace, defense, sporting goods, and infrastructure sectors. Such extensive range applications of such materials are because of their high durability, high strength, lightweight, design and process flexibility. CNT/polymer nanocomposites are also utilized as electrostatic discharge (ESD) and electromagnetic interference (EMI) shielding material due to of high electrical conductivity of this material.

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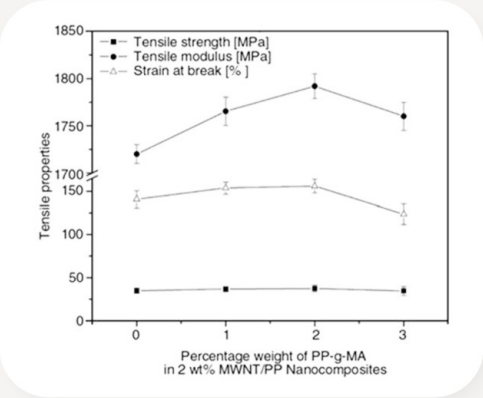
Technical Specification

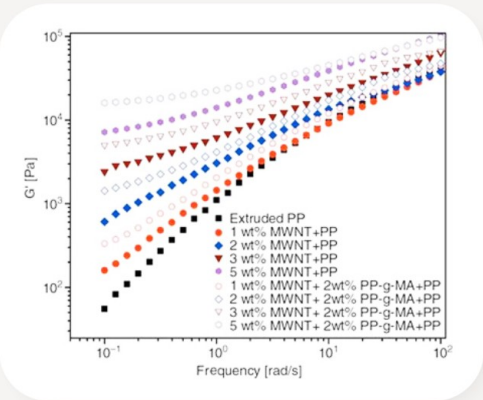
PP was diluted by PP 300 using a twin-screw extruder, and then the specimens were made by compression molding. Volume and surface resistivity were measured by high insulation resistance instrument ZC-90D (IEC 60093-1980, the test voltage is 100V.)

✓ CNT Loading (Wt %)	2%
✓ Volume Resistivity (ohm.cm)	3.3 x 10(6)
✓ Surface Resistivity	2.2 10 (6)



PP was diluted by PP SP179 (copolymer, Izod notched impact strength is about (40~45 KJ/m2) using a twin-screw extruder, then the specimens were made by Injection molding.

✓ CNT Loading (Wt %)	6%
✓ Tensile Strength (MPa)	30
✓ Strain at Break %	36.9
✓ Lzod Notched Impact Strength	18.4
✓ Flexural Strength (MPa)	34.5
✓ Flexual Modulus (MPa)	1266
✓ Melt Index (g/10min) 2.16kg/230°C	2.2



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Available Polymer CNT Masterbatches

Stock No : NS6130-12-001292

- ✓ Base Resin : Polycarbonate (PC)
- ✓ CNT Concentration : 15% - MWCNT
- ✓ Masterbatch Addition : 20 Wt%
- ✓ Electrical Conductivity : 103 `Ω

Stock No : NS6130-12-001293

- ✓ Base Resin : Polyetherimide (PEI)
- ✓ CNT Concentration : 15% - MWCNT
- ✓ Masterbatch Addition : 30 Wt%
- ✓ Electrical Conductivity : 104 `Ω

Stock No : NS6130-12-001294

- ✓ Base Resin : PolyAmide 66
- ✓ CNT Concentration : 15% - MWCNT
- ✓ Masterbatch Addition : 35 Wt%
- ✓ Electrical Conductivity : 104 `Ω

Stock No : NS6130-12-001295

- ✓ Base Resin : ABS (Acrylonitrile Butadiene Styrene)
- ✓ CNT Concentration : 15% - MWCNT
- ✓ Masterbatch Addition : 28 Wt%
- ✓ Electrical Conductivity : 103 `Ω

Stock No : NS6130-12-001296

- ✓ Base Resin : Polystyrene (PS)
- ✓ CNT Concentration : 20% - MWCNT
- ✓ Masterbatch Addition : 20 Wt%
- ✓ Electrical Conductivity : 103 `Ω

Stock No : NS6130-12-001297

- ✓ Base Resin : Polyethylene (PE)
- ✓ CNT Concentration : 25% - MWCNT
- ✓ Masterbatch Addition : 30 Wt%
- ✓ Electrical Conductivity : 103 `Ω

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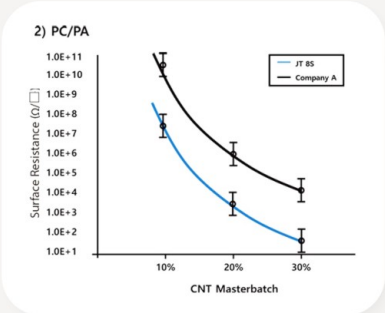
Properties

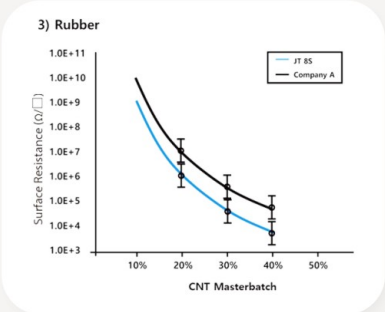
of the Polymer CNT Masterbatch

- ✓ Electric conductivity
- ✓ Electrochemical properties
- ✓ Mechanical properties
- ✓ Thermal stability

When plastic makes contact with carbon nanotubes, it transforms into a material with various functions.

Plastic compounding added with carbon nanotubes manifests special features, for instance, electrical conductivity, thermal conductivity, Electric conductivity, and lightweight and high strength properties.





Electrical Conductivity

Carbon Nanotubes can be applied to plastic for antistatic or EMI shielding by utilizing excellent electrical conductivity.

Lightweight higher strength

Strength properties can be improved by the incorporation of carbon nanotube in the plastic. It can be used as a structural material with higher strength. Also, by using carbon nanotube in components, it can reduce the weight of components. By reducing the weight of components, it enhances the fuel efficiency of vehicles can be applied to the environmental issue by saving energy.

Thermal Conductivity

Carbon Nanotubes not only transfers heat but also dissipates heat. It can be applied to plastic for heating or heat dissipating.

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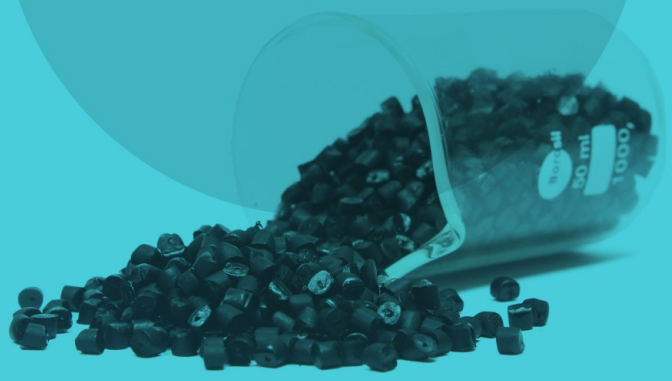
Applications
of the Polymer CNT Masterbatch

- ✓ LED display
- ✓ BLU heat dissipation parts
- ✓ Power semiconductor dissipation element
- ✓ Audio amplifier housing
- ✓ Heat dissipation element for solar battery
- ✓ LED lighting parts
- ✓ Photovoltaic devices
- ✓ Chemical and biochemical sensors
- ✓ electrochemical capacitors



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Ordering Information
and Stock Availability

- Product: Polymer CNT Masterbatch
- Stock Availability: Available
- Distribution: Global
- Packing Sizes: 25Kg, 50Kg, 100Kg & Bulk Orders

Handling Recommendations

- Store in the original container in a dry location.
- Tumble contents prior to use to prevent segregation.
- Open containers should be stored in a drying oven to prevent moisturepickup.

Safety Recommendations

Download MSDS/SDS NS6130-12-001291

Are available from the Nanoshel

Websiteat

https://www.nanoshel.com/sections/cnt-composites

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