



THE CARBON NANOTUBE SPECIALIST

NANO-ENGINEER YOUR FUTURE

PLASTICYL

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PLASTICYL™ PEEK1001 Technical Data Sheet

General Information

Description

PLASTICYL™ is a family of Multi-Wall Carbon Nanotubes (MWNT) thermoplastic concentrates for applications requiring superior electrical conductivity and electrostatic discharge (ESD) properties. PLASTICYL™ PEEK1001 is a conductive masterbatch based on Poly Ether Ether Ketone (PEEK). Because of its low viscosity and high flow, PLASTICYL™ PEEK1001 is ideal for injection molding and extrusion processes.

Key Applications

- Electrical and Electronics (E&E), automotive and packaging industries
- Hard Disk Drive (HDD) internal components
- HDD handling trays
- Semiconductor wafer carrier

Benefits

- Excellent electrical conductivity at low loading
- Excellent surface cleanliness (ionic contamination, liquid particle count, outgassing)
- Retention of key mechanical properties
- Ease of processing
- High temperature resistance
- Dimensional stability

Technical Data

Main Characteristics

CARBON NANOTUBES LOADING (% _{WT})	REAL DENSITY (G/L) ISO 1183	MFI (G/10 MIN) NON-STANDARD TEST : 380°C ; 10 kg ; 4 mm
10± 1,0	1.274	5.4

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Typical Performance after Injection Molding

PROPERTIES	STANDARD	UNITS	NEAT POLYMER	1 wt% NC7000	1.5 wt% NC7000	2 wt% NC7000	3 wt% NC7000	4 wt% NC7000
Volume resistivity	CTM E043	Ohm.cm	10 ¹⁵	1350	865	250	65	10
Surface resistivity	CTM E042	Ohm/sq	10 ¹⁶	10 ¹⁴	10 ¹²	10 ⁸	10 ⁴	10 ³
Melt flow index (400°C ; 2,16 kg)	ISO 1133:1997	g/10 min	-	24.9	16.1	12.1	6.1	1.4

N.B.: Compounds were processed using an L/D ratio and a 48 twin-screw extruder under proprietary conditions. Specimens were molded by injection, according to the processing parameters below.

General Processing Guidelines for Injection Molding

INJECTION SPEED	MOLD TEMPERATURE	MATERIAL TEMPERATURE	PLASTICIZING SPEED	BACK PRESSURE	HOLDING PRESSURE	HOLDING TIME
cm ³ /s	°C	°C	m/s	bars	bars	s
30	160	370	0.4	40	1200	5

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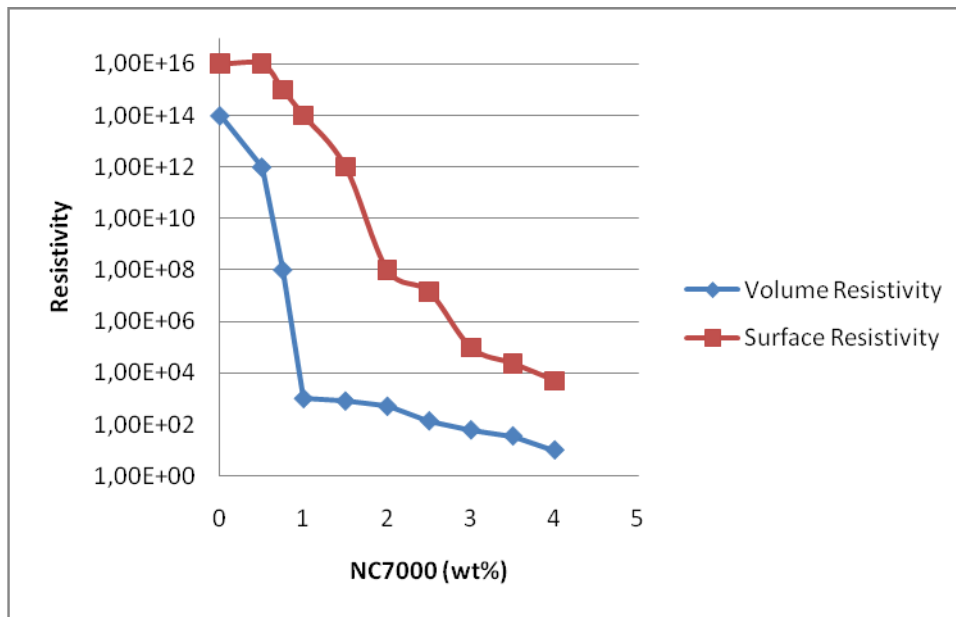
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Percolation Curves for Volume and Surface Resistivity



N.B.: Electrical resistivity measurement in accordance to CTM E043 and CTM E402 (Cabot Testing Method), on standard injection molded IZOD specimens, processed according to parameters provided before (General Processing Guide for Injection Molding).

In order to get well-dispersed CNT aggregates, Nanocyl recommends the use of polymers with a high Melt Flow Index (MFI).

Commercial/Safety Information

Packaging

- 5 kg boxes.
- 25 kg sealed bags.
- 600 kg octabins.

Minimum Order Quantity

Nanocyl's minimum order quantity for PLASTICYL™ PEEK1001 is 5 kg.

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Custom Grades

Besides the commercial grades, Nanocyl is able to toll-compound any type of PEEK masterbatches to meet its clients' needs.

Health and Safety

A Material Safety Data Sheets (MSDS) is available to provide both workers and emergency personnel with the proper procedures for handling or working with the PLASTICYL™ PEEK1001. This MSDS includes information such as physical data (form and color, melting point, etc.), handling and storage recommendations, first aid measures and ecological information. The Safety Data Sheet is provided with any order and should be observed.

Disclaimer

This information is intended to be used only as a guideline for designers and users of modified thermoplastics. All information is believed to be accurate but is given without acceptance of liability. Users should make their own assessment of the suitability of the product for the purposes required. Properties may be materially affected by extrusion and molding parameters as well as by the shape and size of the part. No information supplied by Nanocyl constitutes a warranty regarding the product performance.

For technical assistance, sales or further information, please contact us :

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