



THE CARBON NANOTUBE SPECIALIST

NANO-ENGINEER YOUR FUTURE

PLASTICYL

PLASTICYL™ PP2001 / 5 November 2009 / V08 - Page 1 of 4

PLASTICYL™ PP2001 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™ PP2001 is a conductive masterbatch based on polypropylene. Because of its low viscosity and high flow, PLASTICYL™ PP2001 is ideal for injection molding and extrusion processes.

Key Applications

- Electrostatic Discharge (ESD) and electrically conductive parts
- Electrical and Electronics (E&E), automotive and industrial
- Injection molding, extrusion, films
- Conductive chemical packaging

Benefits

- Excellent electrical conductivity at low loading
- Retention of key mechanical properties
- Ease of processing
- High cleanliness

Technical Data

Main Characteristics

CARBON NANOTUBES LOADING (% _{WT})	REAL DENSITY (G/L) <small>ISO 1183</small>	MELT FLOW INDEX (G/10 ^{MIN})	MELTING POINT (°C) <small>ISO 11357-1,-3</small>
20 ± 1,0	872	Not measurable	165

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PLASTICYL™ PP2001 / Technical Data Sheet / Page 2 of 4

Typical Performance after Dilution

PROPERTIES	STANDARD	UNITS	NEAT POLY-PROPYLENE	AFTER DILUTION TO:			
				1 % _{OWT} of CNTs	2 % _{OWT} of CNTs	3,2 % _{OWT} of CNTs	5 % _{OWT} of CNTs
<i>Volume resistivity</i>	CTM E043	Ohm.cm	1,10 ¹³	3,10 ⁹	4,10 ⁶	2,10 ²	1,10 ¹
<i>Surface resistivity</i>	CTM E042	Ohm.sq	1,10 ¹⁵	1,10 ¹¹	6,10 ¹⁰	1,10 ⁸	4,10 ⁴
<i>Young's Modulus</i>	ISO 527-1,2	MPa	1280	1625	1728	1795	1954
<i>Tensile strength at break</i>	ISO 527-1,2	MPa	28,2	33,2	35,5	36,8	38,2
<i>Strain at break</i>	ISO 527-1,2	%	520	436	154	64	16
<i>Charpy notched impact strength</i>	ISO 180	kJ/m ²	2,4	3,0	3,2	3,0	2,4
<i>Melt flow index</i>	ISO 1133:1997	g/10 min	12,0	9,8	5,6	3,2	1,1
<i>Melting point</i>	ISO 11357-1,-3	°C	-	-	-	-	-
<i>Burning behavior</i>	UL 94	Class	-	-	-	-	-

N.B.: Compounds were processed using an L/D ratio and a 48 twin-screw extruder under proprietary conditions.

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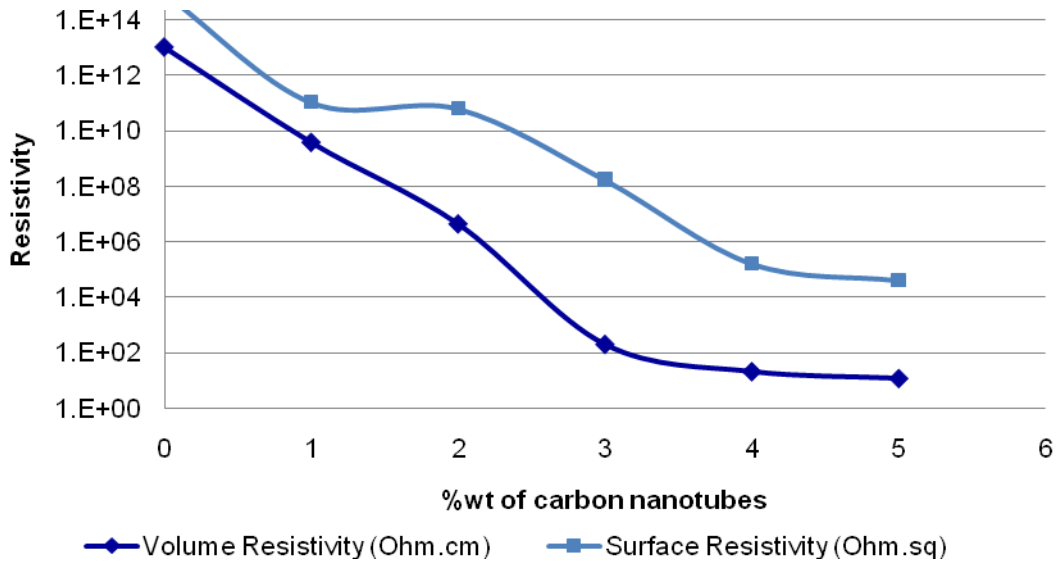
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PLASTICYL

PLASTICYL™ PP2001 / Technical Data Sheet / Page 3 of 4

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.

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™ PP2001 is 5 kg.

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PLASTICYL™ PP2001 / Technical Data Sheet / Page 4 of 4

Custom Grades

Besides the commercial grades, Nanocyl is able to toll-compound any type of PP 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™ PP2001. 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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