



THE CARBON NANOTUBE SPECIALIST

NANO-ENGINEER YOUR FUTURE

PLASTICYL

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## PLASTICYL™ POM1001 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™ POM1001 is a conductive masterbatch based on Polyoxymethylene (polyacetals). Because of its high flow, PLASTICYL™ POM1001 is ideal for injection molding and extrusion processes.

#### Key Applications

- Automotive industry
- Electrical and Electronics (E&E)
- Industrial machinery

#### Benefits

- Excellent electrical conductivity at low loading
- Retention of key mechanical properties
- Ease of processing
- Dimensional stability & creep resistance

### Technical Data

#### Main Characteristics

CARBON NANOTUBES LOADING (% <sub>WT</sub> )	MVR (g/10 MIN) NON-STANDARD TEST : 190°C ; 10 kg ; 4 mm
10 ± 1,0	3.5 ± 1.0

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**Typical Performance after Injection Molding**

PROPERTIES	STANDARD	UNITS	NEAT POLYMER	DILUTION TO 2%WT OF CNT	DILUTION TO 3%WT OF CNT	DILUTION TO 5%WT OF CNT
Volume resistivity	CTM E043	Ohm.cm	10 <sup>13</sup>	5	2	<1
Surface resistivity	CTM E042	Ohm/sq	10 <sup>14</sup>	540	46	10
MVR (190°C ; 10 kg)	ISO 1133	g/10 min	-	22	14	6
Formaldehyde Content	Internal method	ppm	-	165	270	390

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 <sup>3</sup> /s	°C	°C	m/s	bars	bars	s
30	90	200	0.2	50	300	5

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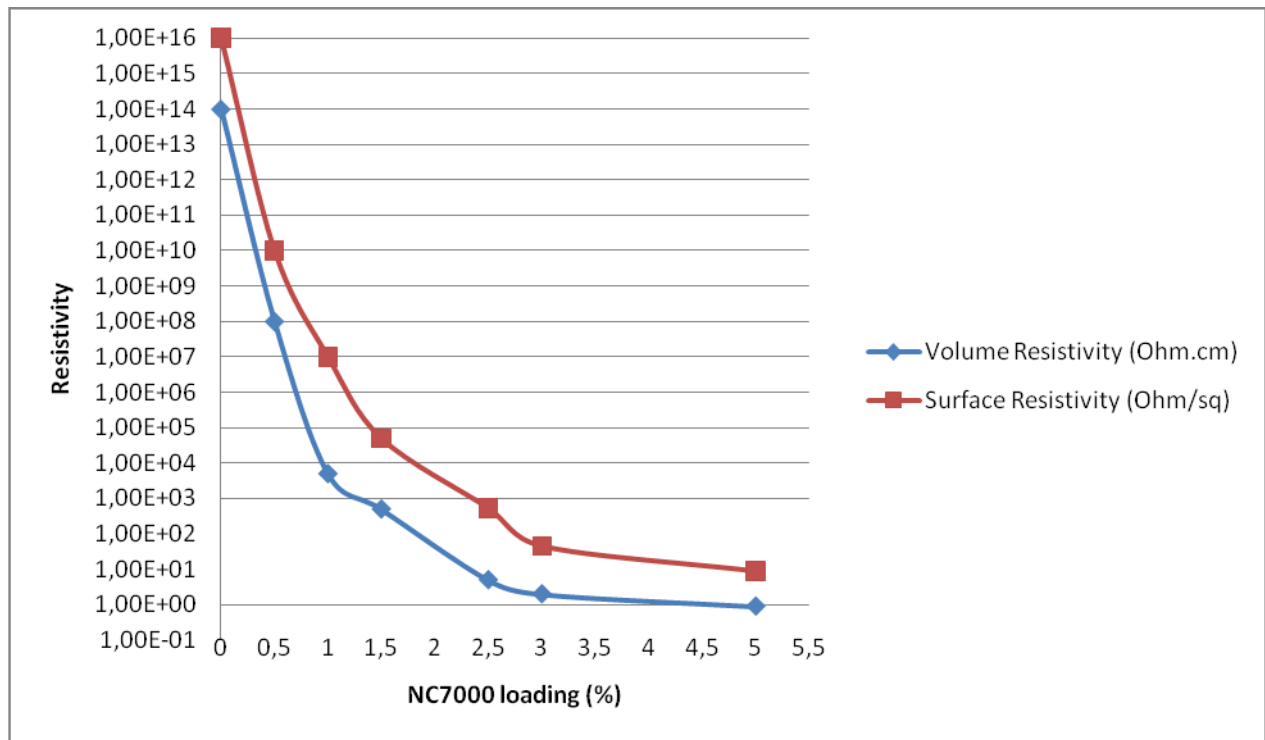
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**Percolation Curves for Volume and Surface Resistivity**



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™ POM1001 is 5 kg.

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### Custom Grades

Besides the commercial grades, Nanocyl is able to toll-compound any type of POM 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™ POM1001. 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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