



Carbon Nanotube-Polystyrene Masterbatch Datasheet

CNano Technology CP320-07 is a conductive polystyrene masterbatch composite containing 7% FloTube™ 9000 carbon nanotubes (CNT). Dispersion of the CNTs is the key to form a percolated network of nanotubes enabling superior electric conductivity in the target application at loadings as low as 1-2%. Due to this low loading of the conductive filler, the CNT composite delivers unparalleled properties when compared to compounds made with conventional conductive fillers such as carbon black and carbon fiber. Since the CNTs are pre-dispersed in the PS carrier, this masterbatch is a versatile product that customers can easily let down to target loadings and achieve desired properties.

Key Features

- Uniform surface and bulk electric resistivity
- Good surface finish
- Low particulation and excellent slough resistance
- Good stiffness and toughness balance

Property Description (when diluted to 3.5% loading)

GENERAL PROPERTIES	Method	Unit	Value
Specific Gravity 23/23 °C	ASTM D792		1.02
Mold Shrinkage	ASTM D955	%	0.3
Melt Flow Rate (200 °C/5kg)	ASTM D1238	g/10min	1.5
MECHANICAL			
Tensile Strength @ Break	ASTM D638	MPa	42
Tensile Elongation @ Break	ASTM D638	%	2
Tensile Modulus	ASTM D638	MPa	3059
Flexural Strength	ASTM D790	MPa	67
Flexural Modulus	ASTM D790	MPa	3447
Izod Notched Impact Strength	ASTM D256	J/m	39
ELECTRICAL			
Volume Resistivity	ASTM D257	Ω.cm	10 ¹ -10 ²
Surface Resistivity	ASTM D257	Ω/sq	10 ⁵ -10 ⁷

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General Recommendations For Injection Molding

- Molding pressure: 50-100 bar
- Melt temperature 220-260 °C
- Injection speed: 50-320 mL/sec
- Mold temperature: 50-70 °C
- Back pressure: 10 bar

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