



# Therma-Tech™ NNC-5000 TC Polyamide 66

## Key Characteristics

### Product Description

Therma-Tech™ Thermal Management Compounds have been engineered to combine the heat transfer and cooling capabilities of metals with the design freedom, weight reduction and cost advantages of thermoplastics. These materials provide the benefits of proprietary conductive additive technologies and the performance of select engineering thermoplastic resins. Therma-Tech compounds have been shown to improve thermal conductivity up to 100-times that of conventional plastics and can be used in a wide range of thermal management applications.

### General

Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Europe • North America	• South America
Features	• Electrically Conductive • Thermally Conductive		
Uses	• Automotive Applications • Automotive Under the Hood	• Consumer Applications • Electrical/Electronic Applications	• Housings • Industrial Applications
Forms	• Pellets		
Processing Method	• Injection Molding		

## Technical Properties <sup>1</sup>

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Specific Gravity	1.60	1.60 g/cm <sup>3</sup>	ASTM D792
Molding Shrinkage - Flow	0.0030 to 0.0040 in/in	0.30 to 0.40 %	ASTM D955
Water Absorption (24 hr, 0.125 in (3.18 mm))	0.50 %	0.50 %	ASTM D570
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus <sup>2</sup>	2.10E+6 psi	14500 MPa	ASTM D638
Tensile Strength <sup>2</sup> (Yield)	7000 psi	48.3 MPa	ASTM D638
Tensile Elongation <sup>2</sup> (Break)	0.80 %	0.80 %	ASTM D638
Flexural Modulus	1.60E+6 psi	11000 MPa	ASTM D790
Flexural Strength	13000 psi	89.6 MPa	ASTM D790
Impact	Typical Value (English)	Typical Value (SI)	Test Method
Notched Izod Impact 73°F (23°C), 0.250 in (6.35 mm), Injection Molded	0.40 ft-lb/in	21 J/m	ASTM D256A
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Deflection Temperature Under Load 66 psi (0.45 MPa), Unannealed, 0.250 in (6.35 mm)	500 °F	260 °C	ASTM D648
Deflection Temperature Under Load 264 psi (1.8 MPa), Unannealed, 0.250 in (6.35 mm)	490 °F	254 °C	ASTM D648
Thermal Conductivity	76 Btu-in/hr/ft <sup>2</sup> /°F	11 W/m/K	ASTM C177
Electrical	Typical Value (English)	Typical Value (SI)	Test Method
Surface Resistivity	1.0E+2 to 1.0E+3 ohm	1.0E+2 to 1.0E+3 ohm	ASTM D257
Volume Resistivity	1.0E+3 to 1.0E+4 ohm-cm	1.0E+3 to 1.0E+4 ohm-cm	ASTM D257

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## Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Processing (Melt) Temp	540 to 570 °F	282 to 299 °C
Mold Temperature	150 to 200 °F	65.6 to 93.3 °C

## Notes

<sup>1</sup> Typical values are not to be construed as specifications.

<sup>2</sup> Type I, 0.20 in/min (5.1 mm/min)

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