

Product Information

# P84<sup>®</sup>NT1 40G HCM

## GRAPHITE FILLED (40%) AROMATIC POLYIMIDE

### Polyimid P84<sup>®</sup> NT - at a glance

- Excellent performance at high temperatures
- High strength and excellent shape stability
- Very good impact resistance
- High heat deflection temperature
- Very good creep resistance even at elevated temperatures
- Machinable with standard tools
- Low wear and friction behaviour
- Processing by Hot compression molding

### Application examples

bushings, seals, bearings components, guides, gear wheels, and valve parts in the automotive and aerospace industries and in industrial equipment.

### Key Features

#### Industrial Sector

Automotive and Mobility, Aircraft and Aerospace, Industry and Engineering

#### Processing

Hot compression moulding, Machining

#### Delivery form

Pellets, Granules, Powder

#### Resistance to

Heat (thermal stability), Fire / burn, Wear / abrasion, Oil / fuels

#### Electrical

Conductive

#### Additives

Lubricant

### Mechanical properties ISO

	dry	Unit	Test Standard
Tensile modulus	<b>682000</b>	psi	ISO 527
Tensile strength	<b>7830</b>	psi	ISO 527
Stress at break	<b>7830</b>	psi	ISO 527

Strain at break, B	<b>2.7</b>	%	ISO 527
Charpy impact strength, +23°C	<b>6.37</b>	ftlb/in <sup>2</sup>	ISO 179/1eU
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, +23°C	<b>0.856</b>	ftlb/in <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-
Compression modulus, 23°C	<b>714000</b>	psi	ISO 604
Compressive strength, 23°C	<b>19000</b>	psi	ISO 604
Flexural modulus, 23°C	<b>755000</b>	psi	ISO 178
Flexural strength, 23°C	<b>12800</b>	psi	ISO 178

<b>Thermal properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Thermal conductivity, LFA, solid state	<b>24.6</b>	BTU in/(hr ft <sup>2</sup> °F)	ISO 22007-4
Glass transition temperature, DMA, 3 point bending	<b>671</b>	°F	ISO 6721-5
Temp. of deflection under load A, 1.80 MPa	<b>617</b>	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>676</b>	°F	ISO 75-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	<b>6.11E-6</b>	in/in/°F	ISO 11359-1/-2

<b>Physical properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Density	<b>1.58</b>	g/cm <sup>3</sup>	ISO 1183
Water absorption, 24h	<b>1.6</b>	%	ISO 62, ASTM D 570
Water absorption, 48h	<b>2</b>	%	ISO 62, ASTM D 570
Shore D hardness	<b>82</b>	-	ISO 7619-1
Density	<b>1.58</b>	g/cm <sup>3</sup>	ASTM D 792

<b>Polyimid</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
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**Tensile test**

Tensile modulus, 23°C	<b>682000</b>	psi	ISO 527
Tensile strength, 23°C	<b>7830</b>	psi	ISO 527

Strain at break, 23°C	<b>2.7</b>	%	ISO 527
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**Flexural test**

Flexural modulus, 23°C	<b>755000</b>	psi	ISO 178
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Flexural strength, 23°C	<b>12800</b>	psi	ISO 178
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**Characteristics**

**Applications**

Electrical and Electronical, General purpose, Fittings

**Color**

Natural color, Black

**Processing**

Compression molding

**Additives**

Conductive agent, Inorganic fillers

**Special Characteristics**

Halogen-free, PTFE-free, Amorphous, High heat resistant, Non-dripping, Self-extinguishing, Thermally conductive

**Chemical Resistance**

Acid resistance, Solvent resistance, Grease resistance, Oil resistance, Radiation resistance, Fuel resistance

**Features**

Creep resistance, Low coefficient of friction, Lightweight

**Compression molding**

**Hot compression molding**

Production of big semi-finished parts (plates, rods, tubes)

Molding at high pressure of 400 kg/cm<sup>2</sup> and temperature between 350 and 380 °C.

Cycle time = hours

Processing of precise parts by machining

Best mechanical properties