Product Information

P84®NT1 HCM

NEAT AROMATIC POLYIMIDE

Polyimid P84®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
Insulating

Additives
Unfilled

Mechanical properties ISO	dry	Unit	Test Standard
Tensile modulus	**3580**	MPa	ISO 527
Tensile strength	**140**	MPa	ISO 527
Stress at break	**140**	MPa	ISO 527

Strain at break, B	**9.7**	%	ISO 527
Tensile creep modulus, 0,5% Strain, 1h	**3390**	MPa	ISO 899-1
Tensile creep modulus, 0,5% Strain, 1000h	**2730**	MPa	ISO 899-1
Charpy impact strength, +23°C	**122**	kJ/m²	ISO 179/1eU
Type of failure	**C**	-	-
Charpy notched impact strength, +23°C	**7**	kJ/m²	ISO 179/1eA
Type of failure	**C**	-	-
Compression modulus, 23°C	**3970**	MPa	ISO 604
Compressive strength , 23°C	**470**	MPa	ISO 604
Flexural modulus, 23°C	**3710**	MPa	ISO 178
Flexural strength, 23°C	**188**	MPa	ISO 178

Thermal properties	**dry**	**Unit**	**Test Standard**
Glass transition temperature, DSC	**337**	°C	ISO 11357-1/-2
Thermal conductivity, LFA, solid state	**0.22**	W/(m K)	ISO 22007-4
Glass transition temperature, DMA, 3 point bending	**361**	°C	ISO 6721-5
Temp. of deflection under load A, 1.80 MPa	**319**	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**343**	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**41**	E-6/K	ISO 11359-1/-2

Physical properties	**dry**	**Unit**	**Test Standard**
Density	**1380**	kg/m³	ISO 1183
Water absorption, 24h	**0.6**	%	ISO 62, ASTM D 570
Water absorption, 48h	**0.8**	%	ISO 62, ASTM D 570
Shore D hardness	**90**	-	ISO 7619-1
Density	**1380**	kg/m³	ASTM D 792

Electrical properties	dry	Unit	Test Standard
Volume resistivity, V	**>1E13**	Ohm*m	IEC 62631-3-1
Surface resistivity, C, circular electrodes	**>1E15**	Ohm per square	IEC 62631-3-2
Relative permittivity, 50Hz	**3.5**	-	IEC 62631-2-1
Relative permittivity, 100Hz	**3.5**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**3.4**	-	IEC 62631-2-1
Dissipation factor, 1MHz	**80**	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	**34**	kV/mm	IEC 60243-1

Powder properties	dry	Unit	Test Standard
Bulk density, powder	**400**	g/l	EN ISO 60

Polyimid	dry	Unit	Test Standard
Tensile test			
Tensile modulus, 23°C	**3580**	MPa	ISO 527
Tensile strength, 23°C	**140**	MPa	ISO 527
Strain at break, 23°C	**9.7**	%	ISO 527
Flexural test			
Flexural modulus, 23°C	**3710**	MPa	ISO 178
Flexural strength, 23°C	**188**	MPa	ISO 178

Characteristics

Applications
Displays, Electrical and Electronical, General purpose, Medical devices, Fittings

Processing
Compression molding

Features
Creep resistance, Low coefficient of friction, Lightweight

Color
Natural color, Brown

Chemical Resistance
Acid resistance, Solvent resistance, Grease resistance, Oil resistance, Radiation resistance, Aging resistance, Fuel resistance

Special Characteristics

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

Compression molding

Hot compression molding
Production of big semi-finished parts (plates, rods, tubes)
Molding at high pressure of 400 kg/cm^2 and temperature between 350 and 380 °C.
Cycle time = hours
Processing of precise parts by machining
Best mechanical properties