

Product Information

P84[®]NT1 05P DF

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 Direct forming

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

Press and sintering, Machining

Delivery form

Pellets, Granules, Powder

Resistance to

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

Electrical

Insulating

Additives

Release agent, Unfilled

Mechanical properties ISO

	dry	Unit	Test Standard
Tensile modulus	423000	psi	ISO 527
Tensile strength	10700	psi	ISO 527
Stress at break	10700	psi	ISO 527

Strain at break, B	3.7	%	ISO 527
Compression modulus, 23°C	447000	psi	ISO 604
Compressive strength , 23°C	56900	psi	ISO 604
Flexural modulus, 23°C	418000	psi	ISO 178
Flexural strength, 23°C	16000	psi	ISO 178
Flexural stress at break, 23°C	16000	psi	ISO 178
Flexural strain at break, 23°C	4.3	%	ISO 178

Thermal properties	dry	Unit	Test Standard
Glass transition temperature, DSC	619	°F	ISO 11357-1/-2
Thermal conductivity, LFA, solid state	1.6	BTU in/(hr ft ² °F)	ISO 22007-4
Heat capacity	0.98	J/(g K)	ISO 22007-4
Temp. of deflection under load A, 1.80 MPa	585	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	608	°F	ISO 75-1/-2

Physical properties	dry	Unit	Test Standard
Density	1.28	g/cm ³	ISO 1183
Water absorption, 24h	1.4	%	ISO 62, ASTM D 570
Water absorption, 48h	1.9	%	ISO 62, ASTM D 570
Shore D hardness	84	-	ISO 7619-1
Density	1.28	g/cm ³	ASTM D 792
Shore D Hardness	84	-	ASTM D 2240

Burning Behav.	dry	Unit	Test Standard
Burning behav. at 1.5 mm nom. thickn.	V-0	class	IEC 60695-11-10
UL 94 Flame rating	V-0	-	UL 94
Thickness tested	0.03	in	-

Electrical properties

	dry	Unit	Test Standard
Volume resistivity on bar, V	>1E13	Ohm*m	Sim. to IEC 62631-3-1
Surface resistance, RSD	>1E15	Ohm	IEC 62631-3-2
Relative permittivity, 100Hz	3.4	-	IEC 62631-2-1
Dissipation factor, 100Hz	0.4	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	864	kV/in	IEC 60243-1

Powder properties

	dry	Unit	Test Standard
Bulk density, powder	0.4	g/l	EN ISO 60

Polyimid

	dry	Unit	Test Standard
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Tensile test

Tensile modulus, 23°C	423000	psi	ISO 527
Tensile strength, 23°C	10700	psi	ISO 527
Strain at break, 23°C	3.7	%	ISO 527

Flexural test

Flexural modulus, 23°C	418000	psi	ISO 178
Flexural strength, 23°C	16000	psi	ISO 178
Flexural strain at break, 23°C	4.3	%	ISO 178

Characteristics

Applications

Displays, Electrical and Electronical, General purpose, Fittings

Color

Natural color, Yellow

Processing

DF Direct forming

Additives

Release agent

Special Characteristics

Amorphous, High heat resistant, Non-dripping, Self-extinguishing

Chemical Resistance

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

Features

Creep resistance, Low coefficient of friction, Lightweight

Compression molding

Direct forming

High number of small parts

Production of green parts at ambient temperature and very high pressure between 2,5 and 3 t/cm²

Cycle time = seconds

Subsequent sintering at temperatures between 340 and 350°C

No or little machining necessary