Product Information

P84®NT1 15G 05P DF

GRAPHITE FILLED (15%) 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
Lubricant, Release agent

Mechanical properties ISO	dry	Unit	Test Standard
Tensile modulus	**2950**	MPa	ISO 527
Tensile strength	**72**	MPa	ISO 527
Stress at break	**72**	MPa	ISO 527

Strain at break, B	**4**	%	ISO 527
Compressive strength , 23°C	**266**	MPa	ISO 604
Flexural modulus, 23°C	**2920**	MPa	ISO 178
Flexural strength, 23°C	**92**	MPa	ISO 178
Flexural stress at break, 23°C	**92**	MPa	ISO 178
Flexural strain at break, 23°C	**3.6**	%	ISO 178

Thermal properties	**dry**	**Unit**	**Test Standard**
Thermal conductivity, LFA, solid state	**0.32**	W/(m K)	ISO 22007-4
Heat capacity	**0.99**	J/(g K)	ISO 22007-4
Temp. of deflection under load A, 1.80 MPa	**283**	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**328**	°C	ISO 75-1/-2

Physical properties	**dry**	**Unit**	**Test Standard**
Density	**1370**	kg/m³	ISO 1183
Shore D hardness	**83**	-	ISO 7619-1
Density	**1370**	kg/m³	ASTM D 792
Shore D Hardness	**83**	-	ASTM D 2240

Electrical properties	**dry**	**Unit**	**Test Standard**
Volume resistivity on bar, V	**3E12**	Ohm*m	Sim. to IEC 62631-3-1
Surface resistance, RSD	**>1E15**	Ohm	IEC 62631-3-2
Dielectric strength, AC, S20/S20, t. 1 mm	**16**	kV/mm	IEC 60243-1

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

Polyimid	**dry**	**Unit**	**Test Standard**

EVONIK
Leading Beyond Chemistry

Tensile test

Tensile modulus, 23°C	**2950**	MPa	ISO 527
Tensile strength, 23°C	**72**	MPa	ISO 527
Strain at break, 23°C	**4**	%	ISO 527

Flexural test

Flexural modulus, 23°C	**2920**	MPa	ISO 178
Flexural strength, 23°C	**92**	MPa	ISO 178
Flexural strain at break, 23°C	**3.6**	%	ISO 178

Characteristics

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

Processing
DF Direct forming

Special Characteristics
Amorphous, High heat resistant, Non-dripping, Self-extinguishing, Thermally conductive

Features
Creep resistance, Low coefficient of friction, Lightweight

Color
Natural color, Green

Additives
Release agent, Conductive agent

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

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/cm^2
Cycle time = seconds
Subsequent sintering at temperatures between 340 and 350°C
No or little machining necessary