

Product Information

# P84®UHT 15G 10P DF

**HIGH TEMPERATURE RESISTANCE, GRAPHITE FILLED (15%),  
PTFE FILLED (10%) POLYIMIDE**

Polyimid P84®UHT - at a glance

- Excellent thermal-oxidative stability (use up to 300 ° C)
- High mechanical strength and dimensional stability even at very high temperatures
- Good creep resistance under load even at high temperatures
- Easy machinability with standard tools for metals
- Excellent tribological properties, high wear resistance
- 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**

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	<b>4080</b>	MPa	ISO 527
Tensile strength	<b>52</b>	MPa	ISO 527
Stress at break	<b>52</b>	MPa	ISO 527

Strain at break, B	<b>2.5</b>	%	ISO 527
Compression modulus, 23°C	<b>4460</b>	MPa	ISO 604
Compressive strength, 23°C	<b>143</b>	MPa	ISO 604
Flexural modulus, 23°C	<b>4430</b>	MPa	ISO 178
Flexural strength, 23°C	<b>73</b>	MPa	ISO 178
Flexural stress at break, 23°C	<b>73</b>	MPa	ISO 178
Flexural strain at break, 23°C	<b>2.1</b>	%	ISO 178

<b>Thermal properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Thermal conductivity, LFA, solid state	<b>0.48</b>	W/(m K)	ISO 22007-4
Heat capacity	<b>1.05</b>	J/(g K)	ISO 22007-4

<b>Physical properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Density	<b>1480</b>	kg/m <sup>3</sup>	ISO 1183
Water absorption, 24h	<b>0.2</b>	%	ISO 62, ASTM D 570
Water absorption, 48h	<b>0.3</b>	%	ISO 62, ASTM D 570
Shore D hardness	<b>80</b>	-	ISO 7619-1
Density	<b>1480</b>	kg/m <sup>3</sup>	ASTM D 792

<b>Powder properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Bulk density, powder	<b>0.45</b>	g/l	EN ISO 60

<b>Polyimid</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
-----------------	------------	-------------	----------------------

**Tensile test**

Tensile modulus, 23°C	<b>4080</b>	MPa	ISO 527
Tensile strength, 23°C	<b>52</b>	MPa	ISO 527
Strain at break, 23°C	<b>2.5</b>	%	ISO 527

**Flexural test**

Flexural modulus, 23°C	<b>4430</b>	MPa	ISO 178
Flexural strength, 23°C	<b>73</b>	MPa	ISO 178
Flexural strain at break, 23°C	<b>2.1</b>	%	ISO 178

### Characteristics

#### Applications

Displays, Electrical and Electronical, General purpose, IT and telecommunication

#### Processing

DF Direct forming

#### Special Characteristics

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

#### Features

Creep resistance, Low coefficient of friction, Lightweight

#### Color

Natural color, Black

#### Additives

Release agent, Conductive agent, Inorganic fillers

#### Chemical Resistance

Acid resistance, Solvent resistance, Grease resistance, Oil resistance, Oxidation 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 and 4 t/cm<sup>2</sup>

Cycle time = seconds

Subsequent sintering at temperatures between 395 and 425°C

No or little machining necessary