

Product Information

P84®UHT 40G HCM

HIGH TEMPERATURE RESISTANCE, GRAPHITE FILLED (40%) POLYIMIDE

Polyimid P84®UHT - at a glance

- Excellent thermal-oxidative stability (use up to 300 ° C)
- Best dimensional stability even at very high temperatures
- Low water absorption and very good chemical resistance
- Easy machinability with standard tools for metals
- Excellent tribological properties, high wear resistance
- 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	1.24E6	psi	ISO 527
Tensile strength	11200	psi	ISO 527
Stress at break	11200	psi	ISO 527

Strain at break, B	1.7	%	ISO 527
Charpy impact strength, +23°C	3.33	ftlb/in ²	ISO 179/1eU
Type of failure	C	-	-
Charpy notched impact strength, +23°C	0.951	ftlb/in ²	ISO 179/1eA
Type of failure	C	-	-
Compression modulus, 23°C	1.15E6	psi	ISO 604
Compressive strength, 23°C	23400	psi	ISO 604
Flexural modulus, 23°C	1.16E6	psi	ISO 178
Flexural strength, 23°C	17800	psi	ISO 178

Thermal properties	dry	Unit	Test Standard
Thermal conductivity, LFA, solid state	30.4	BTU in/(hr ft ² °F)	ISO 22007-4
Glass transition temperature, DMA, 3 point bending	540	°F	ISO 6721-5
Temp. of deflection under load B, 0.45 MPa	687	°F	ISO 75-1/-2

Physical properties	dry	Unit	Test Standard
Density	1.67	g/cm ³	ISO 1183
Water absorption, 24h	0.1	%	ISO 62, ASTM D 570
Water absorption, 48h	0.1	%	ISO 62, ASTM D 570
Shore D hardness	84	-	ISO 7619-1
Density	1.67	g/cm ³	ASTM D 792

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

Polyimid	dry	Unit	Test Standard
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Tensile test

Tensile modulus, 23°C	1.24E6	psi	ISO 527
Tensile strength, 23°C	11200	psi	ISO 527

Strain at break, 23°C	1.7	%	ISO 527
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Flexural test

Flexural modulus, 23°C	1.16E6	psi	ISO 178
Flexural strength, 23°C	17800	psi	ISO 178

Characteristics

Applications

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

Processing

Compression molding

Special Characteristics

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

Features

Creep resistance, Low coefficient of friction, Lightweight

Color

Natural color, Black

Additives

Inorganic fillers

Delivery form

Fine powder (FP)

Chemical Resistance

Acid resistance, Solvent resistance, Grease resistance, Oil resistance, Oxidation resistance, Radiation resistance, Fuel resistance, General chemical resistance

Compression molding

Hot compression molding

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

Molding at high pressure (300 to 500 kg/cm²) and temperature (385 and 415°C)

Cycle time = hours

Processing of precise parts by machining

Best mechanical properties