Product Data Sheet

Celazole* PBI

Celazole* PBI is the highest performance engineering plastic available from Quadrant EPP. It offers the highest mechanical properties of any thermoplastic above 400° F (205° C). Celazole is ideal for high heat bushings, connectors and valve seats. Celazole is extremely hard and can offer a challenge to fabricate. Fabrication instructions can be furnished by Quadrant EPP.

Available today. It offers the highest heat resistance and mechanical property retention over 400°F (205°C) of any unfilled plastic. It has better wear resistance and load carrying capabilities at extreme temperatures than any other reinforced or unreinforced advanced engineering plastic.

As an unreinforced material, Celazole PBI is very "clean" in terms of ionic impurity and it does not outgas (except water). These characteristics make this material very attractive to semiconductor manufacturers for vacuum chamber applications. Celazole PBI has excellent ultrasonic transparency which makes it an ideal choice for parts such as probe tip lenses in ultrasonic measuring equipment.

Celazole PBI is also an excellent thermal insulator. Other plastics in melt do not stick to PBI. These characteristics make it ideal for contact seals and insulator bushings in plastic production and molding equipment.

Property	Method	Unit	Value
Mechanical			
Specific Gravity, 73°F	D792		1.30
Tensile Strength, 73°F	D638	psi	20,000
Tensile Modulus of Elasticity, 73°F	D638	psi	850,000
Elongation, 73°F	D638	%	3.0
Flexural Strength, 73°F	D790	psi	32,000
Flexural Modulus, 73°F	D790	psi	950,000
Compressive Strength, 10% Def., 73°F	D695	psi	50,000
Compressive Modulus of Elasticity, 73°F	D695	psi	900,000
Hardness, Rockwell, Scale as noted, 73°F	D785		E105 (M125
Hardness, Durometer, Shore D scale, 73°F	D2240		D94
Izod Impact (notched), 73°F	D256 Type A	ft-lb/in	0.5
Coefficient of Friction (Dry vs Steel) Dynamic	PTM55007		0.24
Limiting PV, 73°F	PTM55007	psi-fpm	37,500
k (wear) factor	PTM55010		60

For additional information about our products call 1-800-366-0300 or via e-mail at select.support@qplas.com

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Thermal			
Coefficient of linear Thermal Expansion	E-831(TMA)	in/in/°F	1.30 x 10^-5
Deflection Temperature 264 psi	D648	°F	800
Tg-Glass Transition (amorphous)	D3418	°F	750
Continuous Service Temperature in Air (Max.)		°F	600
Thermal Conductivity		BTU-in/(hr-ft²°F)	2.80
Electrical			
Dielectric Strength, Short Term	D149(2)	Volts/mil	550
Surface Resistivity	EOS/ESD S11.11	Ohm/square	>10^13
Dielectric Constant, 10^6 Hz	D150(2)		3.20
Dissipation Factor, 10^6 Hz	D150(2)		0.003
Chemical			
Acids, Weak, 73°F/23°C, acetic acid, dilute hydrochloric or sulfuric			Limited Service
Acids, Strong, 73°F/23°C, conc. hydrochloric or sulfuric			Unacceptable
Alkalies, Weak, 73°F/23°C, dilute ammonia or sodium hydroxide			Limited Service
Alkalies, Strong, 73°F/23°C, conc. ammonia or sodium hydroxide			Unacceptable
Hydrocarbons-Aromatic, 73°F/23°C, benzene, toluene			Acceptable Service
Hydrocarbons-Aliphatic, 73°F/23°C, gasoline, hexane, grease			Acceptable Service
Ketones, Esters, 73°F/23°C, acetone, methyl ethyl ketone			Acceptable Service
Ethers, 73°F/23°C, diethyl ether, tetrahydrofuran			Acceptable Service
Chlorinated Solvents, 73°F/23°C, methylene chloride, chloroform			Acceptable Service
Alcohols, 73°F/23°C, methanol, ethanol, anti-freeze			Acceptable Service
Inorganic Salt Solutions, 73°F/23°C, sodium chloride, potassium cyanate			Acceptable Service
Continuous Sunlight, 73°F/23°C			Limited Service
Miscellaneous			
Water Absorption Immersion, 24 hr	D570	%	0.40
Water Absorption Immersion, Sat.	D570	%	5.00
Ionic Impurities - Na (Sodium)	Total Digestion	ppm	10.00
Ionic Impurities - K (Potassium)	Total Digestion	ppm	1.70
Ionic Impurities - Fe (Iron)	Total Digestion	ppm	13.00
Outgassing TML (Total Mass Loss)	E595	%	2.50
CVCM (Collected Volatile Condensable Material)	E595	%	0.00
WVR(Water Vapor Regained)	E595	%	0.40

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Compliance			
UL94			V-0

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