

Sumitomo Bakelite Durez® 31735 Phenolic, Compression Grade

Category : Polymer , Thermoset , Phenolic

Material Notes:

Durez 31735 is a special purpose phenolic molding compound developed for automotive and industrial pulleys. This material is designed to optimize pulley performance relating to belt life, dimensional tolerance, impact strength, and other properties required in pulley applications. Information provided by Sumitomo Bakelite North America, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Sumitomo-Bakelite-Durez-31735-Phenolic-Compression-Grade.php

Physical Properties	Metric	English	Comments
Density	1.43 g/cc	0.0517 lb/in ³	ASTM D792
Apparent Bulk Density	0.490 g/cc	0.0177 lb/in ³	ASTM D1895
Water Absorption	0.50 %	0.50 %	ASTM D570
Linear Mold Shrinkage	0.0060 cm/cm	0.0060 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	55.0 MPa	7980 psi	ASTM D638
Tensile Modulus	6.90 GPa	1000 ksi	ASTM D638
Flexural Strength	83.0 MPa	12000 psi	
Flexural Modulus	8.20 GPa	1190 ksi	
Compressive Strength	207 MPa	30000 psi	ASTM D695
Poissons Ratio	0.24	0.24	
Shear Modulus	2.78 GPa	403 ksi	Calculated
Izod Impact, Notched	0.280 J/cm	0.525 ft-lb/in	ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear	36.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	20.0 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 30.0 - 150 $\text{Å}^\circ\text{C}$	@Temperature 86.0 - 302 $\text{Å}^\circ\text{F}$	
Specific Heat Capacity	1.17 J/g $\cdot\text{Å}^\circ\text{C}$	0.280 BTU/lb $\cdot\text{Å}^\circ\text{F}$	
Thermal Conductivity	0.370 W/m-K	2.57 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	Cenco Fitch
Deflection Temperature at 1.8 MPa	177 $\text{Å}^\circ\text{C}$	351 $\text{Å}^\circ\text{F}$	ASTM D648

^(264 psi) Thermal Properties	Metric	English	Comments
Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	ASTM D257
Dielectric Constant	6.0 @Frequency 1e+6 Hz	6.0 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	9.80 kV/mm	249 kV/in	Step by step; ASTM D149
	10.8 kV/mm	274 kV/in	Short Time; ASTM D149
Dissipation Factor	0.050 @Frequency 1e+6 Hz	0.050 @Frequency 1e+6 Hz	ASTM D150

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