05000 Series

Graphite Lubricated Phenolic Materials

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plenco
PLASTICS ENGINEERING COMPANY

Plenco's 05000 series

Plenco 05000 materials are generally mineral and graphite reinforced two-stage phenolic molding materials. Some formulations utilize organic fibers for enhanced toughness or PTFE for additional lubrication.

05000 products were developed to provide a low coefficient of friction and very low wear rates for dynamic assemblies. Independent testing shows average COFs to be 0.133 to 0.175 (Pin on Disc Method).

Plenco 05000 products are available in multiple flow grades for optimized injection, transfer and compression molding.

Applications

While some thermoplastics are capable of delivering a good, wear resistant surface, Plenco 05000 materials are uniquely suited to delivering the most consistent physical properties, friction coefficient and wear properties across a range of temperatures and under high PV conditions. Furthermore, they are highly resistant to numerous chemicals that can soften or degrade some thermoplastics.

Plenco 05000 materials have been specified in water and hydrocarbon pumping and metering applications for commercial and consumer appliance and automotive industries.

Their thermoset structure makes them well suited for lapping to close tolerances and surface finish requirements. For that reason they are specified in gaseous product metering and medical applications.

05000 materials can be used for static dissipation, but are not recommended for electrical insulation applications.

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Typical Data Sheet Property Ranges* - Plenco 05000 series

PROPERTY	ENGLISH	ASTM METHOD
Form	Granular	
Apparent Density (lb/ft^3)	40.7 - 56.9	D1895
Specific Gravity	1.43 - 1.83	D792
Mold Shrinkage	0.001 - 0.0086**	D955
Post Shrink	0.04% - 0.30%	D1299
Izod Impact-notched (ft*lb/in)	0.28 - 0.31	D256
Charpy Impact-notched (ft*lb/in)	0.27 - 0.36	D256
Tensile Strength (psi)	4,600 - 9,200	D638
Tensile Modulus (msi)	1.1 - 2.2	D638
Tensile Elongation (%)	0.26 - 0.94	D638
Flexural Strength (psi)	8,100 - 13,900	D790
Flexural Modulus (msi)	1.1 - 2.0	D790
Compressive Strength (psi)	17,800 - 31,100	D695
Rockwell Hardness (E scale)	59 - 111	D785
Heat Resistance (°F)	390 - 486	D794
Heat Deflection-1.82MPa (°F)	316 - 383	D648
Water Absorption (%)	0.03 - 0.31	D570
Dielectric Strength –ST (V/mil)	0 - 230	D149
Comparative Tracking Index (V)	175 - 300	D3638
ASTM Arc Resistance (sec)	20 - 140	D495
UL Flammability (@1.47mm)	HB	UL94
CTE by TMA - 40°C to 130°C (/°F)	3.2 E-05 - 5.2 E-05	
Thermal Conductivity @ 212°F	0.24 - 0.76 (Btu/hr/ft/°F)	
Poisson's Ratio in Tension	0.32 - 0.35	

Please consult your Plenco Technical Sales Representative for specific material details.
Fitness for use must be determined by the end user.

* Properties listed above are the range of properties available from Plenco material data sheets. The range was taken from injection, compression and transfer molded sample data as available on www.plenco.com.

**Mold shrinkage values are generated under controlled laboratory conditions. Values provided above are for reference only and should not be used alone to design or build molds.

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