

# 04000 Series

Heat Resistant Phenolic Materials

## Heat Resistant Phenolic Materials



### Plenco's 04000 series

04000 products are primarily mineral-filled phenolic molding materials. Their formulations are designed to improve heat resistance, dimensional stability and property retention at elevated temperatures. They offer excellent mechanical properties, UL flammability and exceptional resistance to electrical arc tracking. Furthermore, they provide some of the deepest, glossy black finishes while maintaining a low cost per cubic inch.



Formulations are available with single-stage and two-stage phenolic resins and in multiple flow grades for optimized injection, transfer and compression molding.

### Applications



Plenco 04000 materials are generally specified for applications where elevated, constant use temperatures or thermal cycling is expected, and where high UL flammability ratings are needed.

Kitchen cookware and appliance manufacturers have capitalized on their glossy, black and chemical resistant finishes for pan handles, control knobs, electric skillet handles and legs, clothes iron skirts and coffee burner insulators. Large appliance manufacturers have used their great appearance and electrical properties to produce oven vent trim, grill handles, terminal strips, thermostatic control housings, bi-metallic switch housings and burner connectors.

In other industries 04000 products have successfully been used to produce electrical junction boxes, small engine carburetor spacers, and oil field development, completion and production components.



## Typical Data Sheet Property Ranges\* - Plenco 04000 series

PROPERTY	ENGLISH	ASTM METHOD
Form	Granular	
Apparent Density (lb/ft <sup>3</sup> )	37.6 - 46.1	D1895
Specific Gravity	1.41 - 1.60	D792
Mold Shrinkage	0.0026 - 0.0082**	D955
Post Shrink	0.08% - 0.31%	D1299
Izod Impact-notched (ft*lb/in)	0.25 - 0.53	D256
Charpy Impact-notched (ft*lb/in)	0.31 - 0.52	D256
Tensile Strength (psi)	6,100 - 8,800	D638
Tensile Modulus (msi)	1.1 - 1.6	D638
Tensile Elongation (%)	0.49 - 1.13	D638
Flexural Strength (psi)	9,000 - 14,400	D790
Flexural Modulus (msi)	1.1 - 1.5	D790
Compressive Strength (psi)	22,000 - 30,100	D695
Rockwell Hardness (E scale)	56 - 108	D785
Heat Resistance (°F)	383 - 420	D794
Heat Deflection - 1.82MPa (°F)	326 - 448	D648
Water Absorption (%)	0.08 - 0.61	D570
Dielectric Strength - ST (V/mil)	150 - 383	D149
Comparative Tracking Index (V)	150 - 200	D3638
ASTM Arc Resistance (sec)	140 - 190	D495
UL Flammability (@1.47mm)	V-1 - V-0	UL94
CTE by TMA - 40°C to 130°C (1/°F)	3.4 E-05 - 8.2 E-05	
Thermal Conductivity @ 212°F	0.24 - 0.32 (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](http://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.