

MATERIALS ENGINEERING
Technical Datasheet
PLENCO 04414
Two-Stage Phenolic
injection molded

PLENCO 04414 is a flock and mineral filled phenolic molding compound. It is formulated for use in electrical applications that require improved heat resistance, mechanical strength, and dimensional stability. UL recognized under component file E40654. 04414 is available in black. 04414 was qualified under military specification MIL-M-14 (superseded by ASTM D-5948) TYPE CFG and batches can, if requested and paid for, be tested for certification to the standard.

PROPERTY	metric	english	ASTM Test Method
Form	Granular		
Apparent Density	0.61 g/cm ³	38.0 lb/ft ³	D1895
Specific Gravity	1.54		D792
Mold Shrinkage*	0.0072 m/m	0.0072 in/in	D6289
Post Shrinkage 72hr 120°C	0.23 %		D6289
Izod Impact Notched	18.0 J/m	0.34 ft·lb/in	D256
Charpy Impact Notched	20.3 J/m	0.38 ft·lb/in	D256
Drop Ball Impact	105 J/m	2.0 ft·lb/in	Plenco
Tensile Strength	53 MPa	7,711 psi	D638
Tensile Modulus	9,851 MPa	1,429,000 psi	D638
Tensile Elongation	0.7 %		D638
Flexural Strength	84.6 MPa	12,270 psi	D790
Flexural Modulus	8,149 MPa	1,182,000 psi	D790
Compressive Strength	179 MPa	25,986 psi	D695
Heat Resistance	200 °C	392 °F	D794
Deflection Temperature 1.82MPa	168 °C	334 °F	D648
Water Absorption	0.27 %		D570
Rockwell Hardness	70 E scale		D785
Dielectric Strength short time	13.7 kV/mm	348 V/mil	D149
Dissipation Factor, 1MHz	0.049		D150
Permittivity, 1MHz	5.2		D150
Volume Resistivity	6.3E+11 ohm·cm	2.5E+11 ohm·in	D257
ASTM Arc Resistance	143 sec		D495
Comparative Tracking Index	188 V		D3638
UL Flammability	V-1 @1.5mm		UL 94
Oxygen Index	30.8 %		D2863
Coefficient of Thermal Expansion	7.2E-05 /°C	4.0E-05 /°F	E831
Thermal Conductivity 100°C	0.47 W/m°C	0.27 Btu/hr/ft°F	E1461

Store in cool dry place.

The Typical Values listed are results obtained from the testing of standard specimens using the stated test procedures, with said specimens molded under controlled laboratory conditions from representative samplings of the product. Although Plastics Engineering Company at all times reserves the right to make changes in the materials, suppliers and processing, the values listed as typical are those to be expected at the time of our manufacture. The final determination of the accuracy or completeness of any information, the suitability of the product for the use contemplated, the manner of its use, and the matter of any infringement of patents in use, are all the sole responsibility of the user. PLASTICS ENGINEERING COMPANY MAKES NO WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THIS PRODUCT, INCLUDING NO WARRANTY OF THE MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. Plastics Engineering Company reserves at all times the right to discontinue the production of any or all of its products. This is an uncontrolled copy and not subject to updates.

*Mold Shrinkage obtained under controlled laboratory conditions with relatively simple mold geometry and should be used for comparison purposes only and not for actual tool design.