

Bakelite® MP 4165

Melamine Phenolic

Hexion Inc.

Message:

Product Description
Melamine-phenolic moulding compound, inorganically filled, glass fibre reinforced, good temperature stability, high level of mechanical properties, copper adhesive, flammability UL 94 V-0/1,5 mm (MP 4165-8899-S5), UL 94 V-0 / 1,6 mm (not listed)

Application Areas
Commutators (fuel pumps, actuators, HVAC motors, fan motors, window lift motors, ABS, wiper motors, garden appliances, household appliances, power tools, universal motors)

General Information	
Filler / Reinforcement	Glass Fiber Inorganic
Features	Good Dimensional Stability Good Thermal Stability High Strength Low Shrinkage
Uses	Appliances Lawn and Garden Equipment Power/Other Tools Pump Parts
Processing Method	Compression Molding Injection Molding

Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.81	g/cm ³	ISO 1183
Apparent Density	0.65	g/cm ³	ISO 60
Molding Shrinkage			ISO 2577
-- 1	0.050	%	
-- 2	0.10	%	
Water Absorption - 24h/23C	20.0	mg	ISO 62
Post Shrinkage			ISO 2577
-- 3	0.30	%	
-- 4	0.25	%	
Compression Molding Molding Pressure	> 15.0	MPa	
Compression Molding Temperature	160 to 190	°C	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness (H 961/30)	290	MPa	ISO 2039-1

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	12500	MPa	ISO 527-2/1
Tensile Stress	60.0	MPa	ISO 527-2/5
Flexural Modulus	13500	MPa	ISO 178
Flexural Stress ⁵	110	MPa	ISO 178
Compressive Stress	250	MPa	ISO 604
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength (23°C)	7.5	kJ/m ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (8.0 MPa, Unannealed)	135	°C	ISO 75-2/C
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+11	ohms	IEC 60093
Volume Resistivity	1.0E+12	ohms·cm	IEC 60093
Electric Strength ⁶ (1.00 mm)	29	kV/mm	IEC 60243-1
Relative Permittivity (100 Hz)	7.50		IEC 60250
Dissipation Factor (100 Hz)	0.10		IEC 60250
Comparative Tracking Index (Solution A)	300	V	IEC 60112
Injection	Nominal Value	Unit	
Rear Temperature	60.0 to 75.0	°C	
Nozzle Temperature	80.0 to 100	°C	
Processing (Melt) Temp	80.0 to 100	°C	
Mold Temperature	160 to 190	°C	
Injection Pressure	> 15.0	MPa	
Back Pressure	0.500 to 2.00	MPa	
NOTE			
1.	Compression		
2.	Injection		
3.	Injection		
4.	Compression		
5.	2.0 mm/min		
6.	short term, electrode layout P25mm/P25mm in transformer oil equivalent to IEC 60296		

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