

Vyncolit® 4451XB

Phenolic

Vyncolit N.V.

Message:

Vyncolit 4451XB is an organic and mineral filled phenolic molding compound, with excellent mechanical properties.

General Information			
Filler / Reinforcement	Mineral filler		
	Organic filler		
Appearance	Black		
Processing Method	Resin transfer molding		
	Compression molding		
	Injection molding		
Part Marking Code (ISO 11469)	PF 2 C3		
Physical	Nominal Value	Unit	Test Method
Density	1.50	g/cm ³	ISO 1183
Apparent Density	0.45 - 0.55	g/cm ³	ISO 60
Molding Shrinkage - Flow			ISO 2577
-- ¹	0.20 - 0.30	%	ISO 2577
--	0.65 - 0.75	%	ISO 2577
Water Absorption (23°C, 24 hr)	0.50	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (Injection Molded)	8500 - 10000	MPa	ISO 527-2
Tensile Stress (Break, Injection Molded)	50.0 - 60.0	MPa	ISO 527-2
Tensile Strain (Break, Injection Molded)	0.75 - 0.85	%	ISO 527-2
Flexural Modulus (Injection Molded)	7500 - 9000	MPa	ISO 178
Flexural Stress ² (1.4% strain, injection molding)	115 - 140	MPa	ISO 178
Compressive Stress ³	200 - 230	MPa	ISO 604
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (Injection Molded)	2.8 - 4.5	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength	8.5 - 10	kJ/m ²	ISO 179
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
1.8 MPa, not annealed	155 - 175	°C	ISO 75-2/A
8.0 MPa, not annealed	130	°C	ISO 75-2/C
Linear thermal expansion coefficient			TMA
Flow	4.5E-5 - 5.5E-5	cm/cm/°C	TMA

Lateral	5.5E-5 - 6.5E-5	cm/cm/°C	TMA
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength	25	kV/mm	IEC 60243-1
Comparative Tracking Index	175	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.60 mm	V-1		UL 94
4.00 mm	V-0		UL 94
Injection	Nominal Value	Unit	
Rear Temperature	60.0	°C	
Middle Temperature	75.0	°C	
Nozzle Temperature	90.0	°C	
Processing (Melt) Temp	100 - 115	°C	
Mold Temperature	165 - 190	°C	
Injection Pressure	100 - 250	MPa	
Holding Pressure	30.0 - 90.0	MPa	
Back Pressure	5.00 - 15.0	MPa	
Screw Speed	50	rpm	
Injection instructions			
Injection Time: 2 to 8 secHold Time: 1 to 5 sec/mmCure Time, 0.125 in: 5 to 12 sec/mm			
NOTE			
1.	Post Shrinkage		
2.	1.3 to 1.5% strain to failure in flexure		
3.	Injection Molded		

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