

Vyncolit® X659

Description	Vyncolit® X659 is a glass fiber, mineral and graphite filled phenolic molding compound with superior stiffness, high dimensional stability and excellent tribological properties. Good chemical resistance against several fuels at elevated temperatures.
Generic identification	>PF-(MD+GF+CD)80< (according to ISO 11469: 2000)
Main filler	glass fiber and mineral
Resin	novolac
Color	black
Molding method	compression, transfer, injection

PHENOLIC

	Properties ¹	Typical Value ²	Unit	Method	
Physical	Density	2.06	g/cm ³	ISO 1183	
	Apparent density	1	g/cm ³	ISO 60	
	Molding shrinkage	0.2	%	ISO 2577	
	Post shrinkage	0.01	%	ISO 2577	
	Water absorption	0.04	%	ISO 62	
	Friction coefficient				
	Static		-		
	Dynamic		-		
Thermal	Temperature of deflection under load	222	°C @ 1.8 MPa °C @ 8.0 MPa	ISO 75 Af ISO 75 C	
	Thermal conductivity		W/m K	ASTM E1461	
	UL-flammability ³		-	UL 94	
		mm	-	UL 94	
		mm	-	UL 94	
	Coefficient of linear thermal expansion				
	Parallel	14	10 ⁻⁶ /°C	TMA	
	Perpendicular	30	10 ⁻⁶ /°C	TMA	
Mechanical	Flexural strength	163	MPa	ISO 178	
	Flexural modulus	26	GPa	ISO 178	
	Flexural strain at break	0.69	%	ISO 178	
	Tensile strength	89	MPa	ISO 527-1	
	Tensile Young's modulus	29	GPa	ISO 527-1	
	Tensile strain at break	0.35	%	ISO 527-1	
	Charpy impact strength	notched	2.6	kJ/m ²	ISO 179-1
		unnotched	9.6	kJ/m ²	ISO 179-1
Compressive strength	269	MPa	ISO 604		
Electrical	Surface resistivity	not suitable	Ohm	IEC 60093	
	Volume resistivity	for	Ohm cm	IEC 60093	
	Electric strength	electrical	kV/mm	IEC 60243-1	
	Comparative tracking index (CTI)	insulation	V	IEC 60112	

RoHS: Vyncolit® X659 is in compliance with RoHS2 (2011/65/EU, Restriction of Hazardous Substances).

WEEE: Parts produced from Vyncolit® X659 are not subject to 'selective treatment' according to the Directive 2002/96/EC on Waste Electrical and Electronic Equipment.

PFOS: Vyncolit® X659 does not contain perfluorooctansulfonate (PFOS) according to European Directive 2006/122/EC.

REACH/SVHC: Vyncolit® X659 does not contain any Substances of Very High Concern (SVHC) as listed on the candidate list published by ECHA.

¹ Properties measured on injection molded test specimens - MPTS - ISO 3167.

² The reported values are averages, and are not intended for specification purposes. Contact your Vyncolit representative.

³ UL measurement based on internal measurements, not UL-listed.