

# POROPHEN® GF 9202 L12

(Preliminary data)<sup>1</sup>

<b>Description</b>	POROPHEN® GF 9202 L12 is a long glass fiber reinforced phenolic molding compound with high mechanical strength and excellent thermal properties.
<b>Generic identification</b>	>PF-GF55< (according to ISO 11469: 2000)
<b>Main filler</b>	Glass fiber
<b>Resin</b>	Novolac
<b>Color</b>	Dark grey
<b>Molding method</b>	Compression

POROPHEN®

	Properties <sup>2</sup>	Typical Value <sup>3</sup>	Unit	Method	
<b>Physical</b>	Density	<b>1.79</b>	g/cm <sup>3</sup>	ISO 1183	
	Apparent density		g/cm <sup>3</sup>	ISO 60	
	Molding shrinkage	<b>0.08</b>	%	ISO 2577	
	Post shrinkage	<b>-0.02</b>	%	ISO 2577	
	Water absorption	<b>0.4</b>	%	ISO 62	
	Friction coefficient			-	-
<b>Thermal</b>	Temperature of deflection under load		°C @ 1.8 MPa °C @ 8.0 MPa	ISO 75 Af ISO 75 C	
	Thermal conductivity		W/m K	ASTM E1461	
	Glass transition temperature (Tg)		°C	TMA	
	UL-flammability <sup>4</sup>		-	UL 94	
	Coefficient of linear thermal expansion	Parallel	<b>10</b>	10 <sup>-6</sup> /°C	TMA
		Perpendicular	<b>22</b>	10 <sup>-6</sup> /°C	TMA
<b>Mechanical</b>	Flexural strength	<b>350</b>	MPa	ISO 178	
	Flexural modulus	<b>26</b>	GPa	ISO 178	
	Flexural strain at break	<b>0.6</b>	%	ISO 178	
	Tensile strength	<b>140</b>	MPa	ISO 527-1	
	Tensile Young's modulus	<b>29</b>	GPa	ISO 527-1	
	Tensile strain at break		%	ISO 527-1	
	Charpy impact strength	notched	<b>65</b>	kJ/m <sup>2</sup>	ISO 179-1
		unnotched		kJ/m <sup>2</sup>	ISO 179-1
Compressive strength	<b>390</b>	MPa	ISO 604		
<b>Electrical</b>	Surface resistivity		Ohm	ASTM D257	
	Volume resistivity		Ohm cm	ASTM D527	
	Electric strength		kV/mm	IEC 60243-1	
	Comparative tracking index (CTI)	<b>150</b>	V	IEC 60112	
	Relative Permittivity (23°C)			IEC 60250	
	Dielectric dissipation factor (23°C)			IEC 60250	

**RoHS:** POROPHEN® GF 9202 L12 is in compliance with RoHS2 (2011/65/EU, Restriction of Hazardous Substances).

**WEEE:** Parts produced from POROPHEN® GF 9202 L12 are not subject to 'selective treatment' according to the Directive 2002/96/EC on Waste Electrical and Electronic Equipment.

**PFOS:** POROPHEN® GF 9202 L12 does not contain perfluorooctansulfonate (PFOS) according to European Directive 2006/122/EC.

**REACH/SVHC:** POROPHEN® GF 9202 L12 does not contain any Substances of Very High Concern (SVHC) as listed on the candidate list published by ECHA.

<sup>1</sup> Subject to change without notice.

<sup>2</sup> Properties measured on compression molded test specimens (MPTS - ISO 3167 - as molded).

<sup>3</sup> The reported values are averages, and are not intended for specification purposes. Contact your Neopreg representative.

<sup>4</sup> UL measurement based on internal measurements, not UL-listed.

# POROPHEN® GF 9202 L5

(Preliminary data)<sup>1</sup>

<b>Description</b>	POROPHEN® GF 9202 L5 is a long glass fiber reinforced phenolic molding compound with high mechanical strength and excellent thermal properties.
<b>Generic identification</b>	>PF-GF55< (according to ISO 11469: 2000)
<b>Main filler</b>	Glass fiber
<b>Resin</b>	Novolac
<b>Color</b>	Dark grey
<b>Molding method</b>	Compression

POROPHEN®

	Properties <sup>2</sup>	Typical Value <sup>3</sup>	Unit	Method	
<b>Physical</b>	Density	<b>1.76</b>	g/cm <sup>3</sup>	ISO 1183	
	Apparent density		g/cm <sup>3</sup>	ISO 60	
	Molding shrinkage	<b>0.12</b>	%	ISO 2577	
	Post shrinkage	<b>0.01</b>	%	ISO 2577	
	Water absorption		%	ISO 62	
	Friction coefficient	Static		-	
	Dynamic		-		
<b>Thermal</b>	Temperature of deflection under load		°C @ 1.8 MPa	ISO 75 Af	
			°C @ 8.0 MPa	ISO 75 C	
	Thermal conductivity		W/m K	ASTM E1461	
	Glass transition temperature (Tg)		°C	TMA	
	UL-flammability <sup>4</sup>	mm	-	UL 94	
		mm	-	UL 94	
<b>Mechanical</b>	Flexural strength	<b>257</b>	MPa	ISO 178	
	Flexural modulus	<b>19.8</b>	GPa	ISO 178	
	Flexural strain at break		%	ISO 178	
	Tensile strength	<b>139</b>	MPa	ISO 527-1	
	Tensile Young's modulus	<b>24.7</b>	GPa	ISO 527-1	
	Tensile strain at break	<b>0.6</b>	%	ISO 527-1	
	Charpy impact strength	notched	<b>49</b>	kJ/m <sup>2</sup>	ISO 179-1
		unnotched		kJ/m <sup>2</sup>	ISO 179-1
Compressive strength	<b>381</b>	MPa	ISO 604		
<b>Electrical</b>	Surface resistivity		Ohm	ASTM D257	
	Volume resistivity		Ohm cm	ASTM D527	
	Electric strength		kV/mm	IEC 60243-1	
	Comparative tracking index (CTI)		V	IEC 60112	
	Relative Permittivity (23°C)			IEC 60250	
	Dielectric dissipation factor (23°C)			IEC 60250	

**RoHS:** POROPHEN® GF 9202 L5 is in compliance with RoHS2 (2011/65/EU, Restriction of Hazardous Substances).

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