Udel® GF-120

polysulfone

Udel® GF-120, resin is a 20% glass fiber reinforced polysulfone compound. Glass fiber substantially increases the rigidity, tensile strength, creep resistance, dimensional stability and chemical resistance of the polysulfone resin. The high performance properties and attractive price make these resins particularly effective alternatives to metals in many engineering applications.

- Black: Udel® GF-120 Bk 937
- Black: Udel® GF-120 BK 937
- Natural: Udel® GF-120 NT 20
- Grey: Udel® GF-120 GY 1234

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific • Europe	• North America • South America	
Filler / Reinforcement	• Glass Fiber Reinforcement		
Features	• Acid Resistant • Alcohol Resistant • Alkali Resistant • Autoclave Sterilizable • E-beam Sterilizable • Ethylene Oxide Sterilizable • Food Contact Acceptable • Good Chemical Resistance	• Good Creep Resistance • Good Dimensional Stability • Good Sterilizability • Good Strength • Heat Sterilizable • High Heat Resistance • High Rigidity • Hydrocarbon Resistant	• Hydrolytically Stable • Radiation (Gamma) Resistant • Radiation Sterilizable • Radiotranslucent • Steam Resistant • Steam Sterilizable
Uses	• Appliance Components • Appliances • Automotive Electronics • Bobbins • Dental Applications • Electrical Parts	• Electrical/Electronic Applications • Fittings • Food Service Applications • Hospital Goods • Industrial Parts • Medical Appliances	• Medical/Healthcare Applications • Microwave Cookware • Piping • Plumbing Parts • Surgical Instruments • Valves/Valve Parts
Agency Ratings	• ISO 10993 • ISO 10993-Part 1	• NSF 51 [1] • NSF 61 [2]	
RoHS Compliance	• RoHS Compliant		
Appearance	• Black • Grey	• Natural Color • Opaque	
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

Physical	Typical Value	Unit	Test method
Specific Gravity	1.40		ASTM D792
Melt Mass-Flow Rate (MFR) (343°C/2.16 kg)	6.5	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.30	%	ASTM D955

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	6000	MPa	ASTM D638
Tensile Strength	96.5	MPa	ASTM D638
Tensile Elongation (Break)	3.0	%	ASTM D638

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Mechanical	Typical Value	Unit	Test method
Flexural Modulus	5520	MPa	ASTM D790
Flexural Strength	148	MPa	ASTM D790

Impact	Typical Value	Unit	Test method
Notched Izod Impact	53	J/m	ASTM D256
Tensile Impact Strength	109	kJ/m²	ASTM D1822

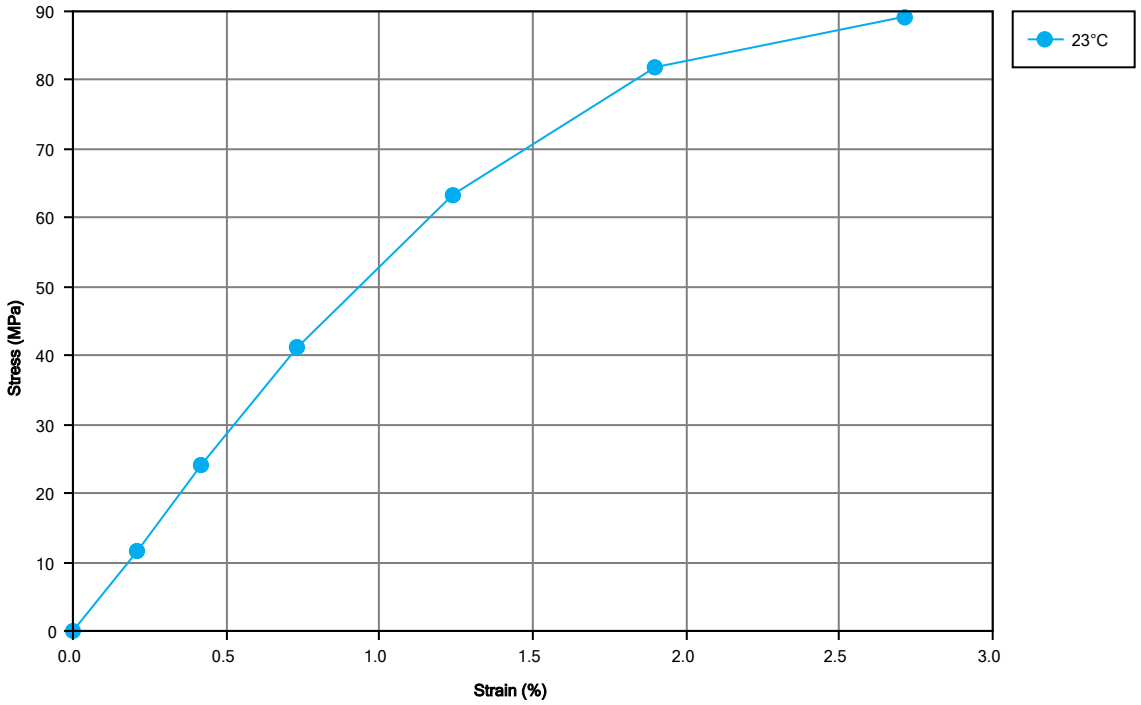
Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	180	°C	

Electrical	Typical Value	Unit	Test method
Volume Resistivity	2.0E+16	ohm·cm	ASTM D257
Dielectric Strength	19	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.31		
1 MHz	3.28		
Dissipation Factor			ASTM D150
60 Hz	0.0080		
1 MHz	0.0060		

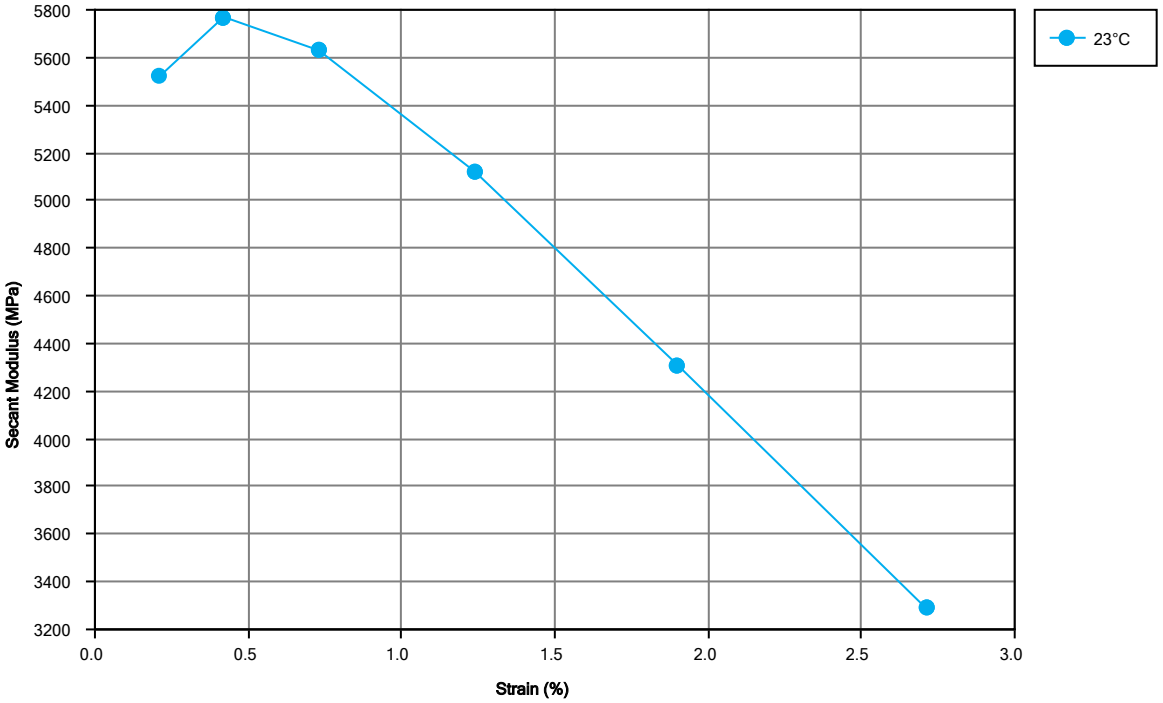
Flammability	Typical Value	Unit	Test method
Flame Rating [3] (3.18 mm)	HB		UL 94

Injection	Typical Value	Unit
Drying Temperature	149 to 163	°C
Drying Time	3.0 to 4.0	hr
Processing (Melt) Temp	343 to 399	°C
Mold Temperature	121 to 163	°C
Injection Rate	Fast	
Back Pressure	0.345 to 0.689	MPa
Screw Compression Ratio	2.0:1.0	

Isothermal Stress vs. Strain (ISO 11403-1)



Secant Modulus vs. Strain (ISO 11403-1)



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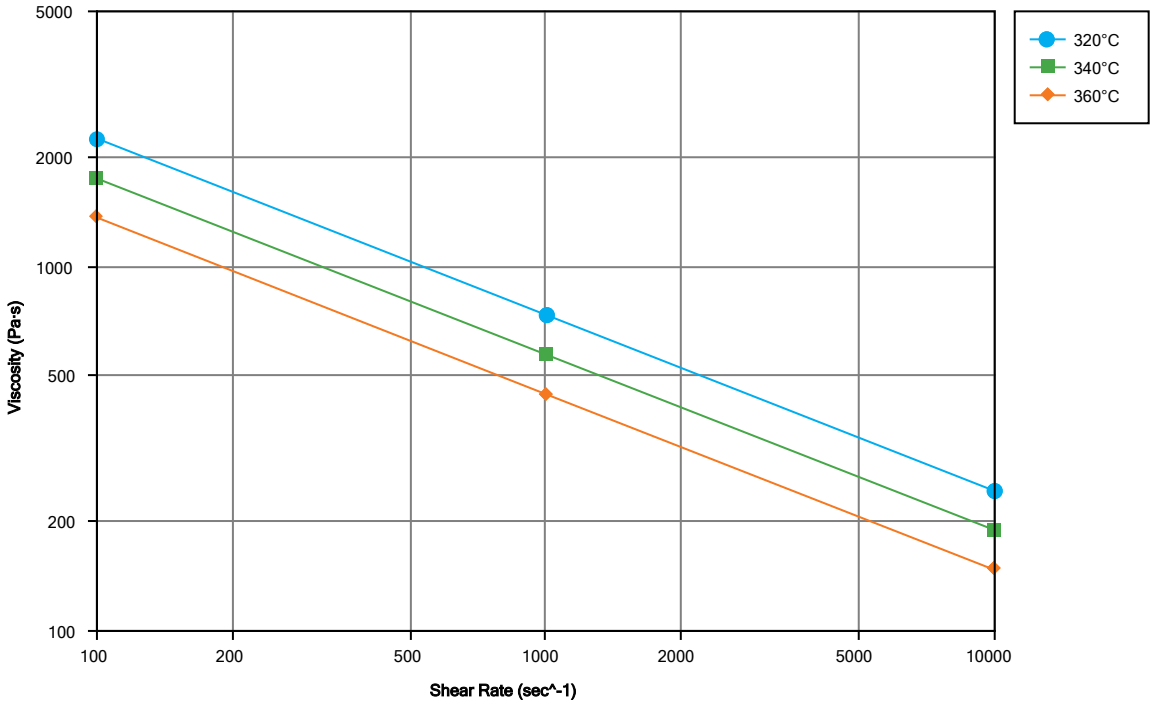
Viscosity vs. Shear Rate (ISO 11403-2)



Notes

Typical properties: these are not to be construed as specifications.

[1] Maximum Temperature of Use: 149°C (300°F)

[2] Tested at 82 °C (180 °F) (Commercial Hot)

[3] These flammability ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

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