Udel® GF-110
polysulfone

Udel® GF-110, resin is a 10% glass fiber reinforced polysulfone (PSU). 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.

- Natural: Udel® GF-110 NT

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber	
Features	• Acid Resistant • Alcohol Resistant • Alkali Resistant • Chemical Resistant • Creep Resistant • Good Dimensional Stability	• Good Strength • High Heat Resistance • High Rigidity • Hydrocarbon Resistant • Hydrolytically Stable
Uses	• Appliance Components • Appliances • Connectors • Fittings • Food Service Applications	• Industrial Parts • Microwave Cookware • Plumbing Parts • Valves/Valve Parts
Agency Ratings	• ISO 10993	• NSF STD-61[1]
RoHS Compliance	• RoHS Compliant	
Appearance	• Natural Color	• Opaque
Forms	• Pellets	
Processing Method	• Extrusion	• Injection Molding

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.33		ASTM D792
Melt Mass-Flow Rate (MFR) (343°C/2.16 kg)	6.5	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.40	%	ASTM D955
Water Absorption (24 hr)	0.29	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	3720	MPa	ASTM D638
Tensile Strength (Break)	77.9	MPa	ASTM D638
Tensile Elongation (Break)	4.0	%	ASTM D638
Flexural Modulus	3790	MPa	ASTM D790
Flexural Strength	128	MPa	ASTM D790

Impact	Typical Value	Unit	Test method
Notched Izod Impact	48	J/m	ASTM D256
Tensile Impact Strength	101	kJ/m²	ASTM D1822

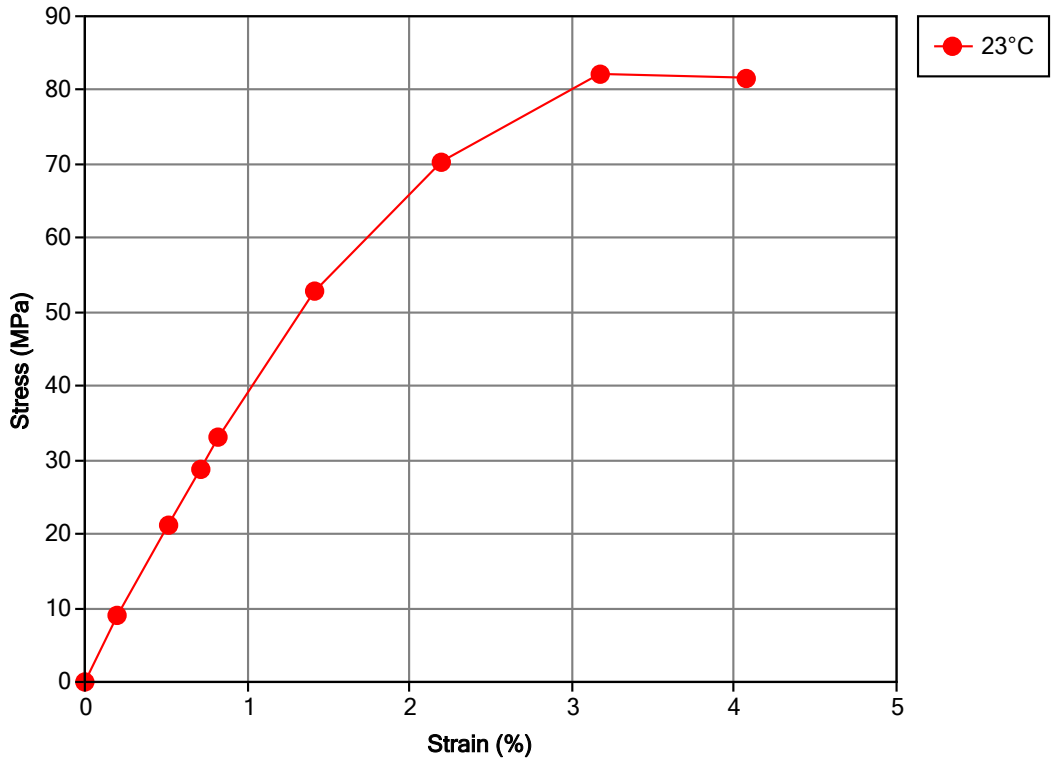
Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	179	°C	
CLTE			ASTM D696
Flow	4.0E-5	cm/cm/°C	
Transverse	4.9E-5	cm/cm/°C	

Electrical	Typical Value	Unit	Test method
Volume Resistivity	3.0E+16	ohms·cm	ASTM D257
Dielectric Strength	19	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.18		
1 kHz	3.19		
1 MHz	3.15		
Dissipation Factor			ASTM D150
60 Hz	7.0E-4		
1 kHz	1.1E-3		
1 MHz	6.0E-3		

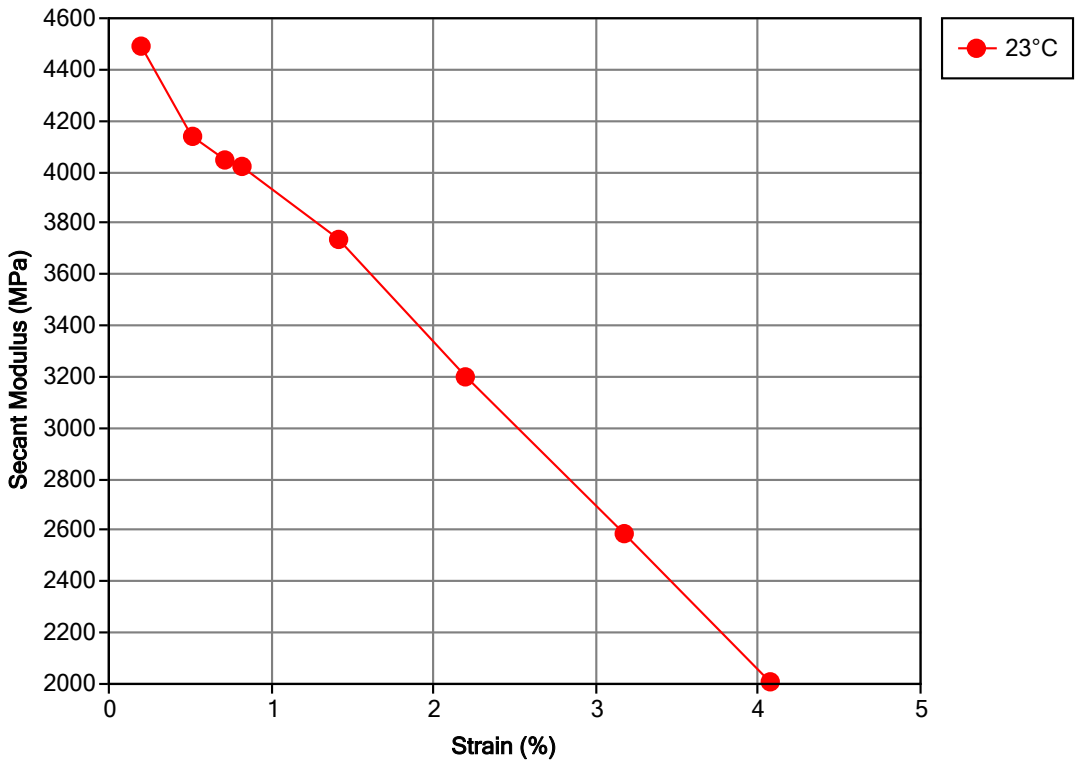
Flammability	Typical Value	Unit	Test method
Flame Rating			UL 94
1.5 to 3.0 mm, ALL [2]	HB		
4.0 to 6.0 mm, ALL	V-0		

Injection	Typical Value	Unit
Drying Temperature - Desiccant Dryer	135 to 163	°C
Drying Time - Desiccant Dryer	2.0 to 4.0	hr
Suggested Max Moisture	< 0.050	%
Processing (Melt) Temp	350 to 380	°C
Mold Temperature	138 to 160	°C
Injection Rate	Moderate-Fast	
Back Pressure	1.50 to 3.00	MPa
Screw Compression Ratio	1.8:1.0 to 2.6:1.0	

Isothermal Stress vs. Strain (ISO 11403)



Secant Modulus vs. Strain (ISO 11403)



Notes

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

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

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

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