VALOX™ RESIN SHF4320

REGION EUROPE

DESCRIPTION

VALOX SHF4320 is a 10% glass fibre reinforced PBT injection moulding resin with excellent flow combined with good mechanical and heat properties. Applications: Automotive connectors.

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yield, 5 mm/min	90	MPa	ISO 527
Tensile Stress, break, 5 mm/min	90	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3.4	%	ISO 527
Tensile Strain, break, 5 mm/min	3.4	%	ISO 527
Tensile Modulus, 1 mm/min	4550	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	130	MPa	ISO 178
Flexural Stress, break, 2 mm/min	130	MPa	ISO 178
Flexural Strain, break, 2 mm/min	5	%	ISO 178
Flexural Modulus, 2 mm/min	4000	MPa	ISO 178
Ball Indentation Hardness, H358/30	110	MPa	ISO 2039-1
Hardness, Rockwell R	120	-	ISO 2039-2
IMPACT			
Izod Impact, unnotched 80*10*4 +23°C	25	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	25	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	4	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	6	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate A/50	220	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	215	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	4.63E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, flow	6.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	8.E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, flow	4.79E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	2.11E-04	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	220	°C	ISO 306
Vicat Softening Temp, Rate B/120	205	°C	ISO 306

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HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	215	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	185	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.36	-	ASTM D 792
Filler Content	10	%	ASTM D 229
Mold Shrinkage on Tensile Bar, flow	0.5 – 0.9	%	SABIC method
Mold Shrinkage on Tensile Bar, xflow	0.7 – 1.1	%	SABIC method
Density	1.36	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.2	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.07	%	ISO 62
Melt Volume Rate, MVR at 250°C/2.16 kg	28	cm³/10 min	ISO 1133
Melt Viscosity, 260°C, 1500 sec-1	100	Pa-s	ISO 11443
ELECTRICAL			
Volume Resistivity	>1.E+15	Ohm-cm	ASTM D 257
Dielectric Strength, in oil, 0.8 mm	30	kV/mm	ASTM D 149
Dielectric Strength, in oil, 1.6 mm	23	kV/mm	ASTM D 149
Dielectric Strength, in oil, 3.2 mm	18	kV/mm	ASTM D 149
Relative Permittivity, 1 MHz	3.4	-	ASTM D 150
Dissipation Factor, 1 MHz	0.015	-	ASTM D 150
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 0.8 mm	30	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	23	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	18	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	3.4	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.001	-	IEC 60250
Dissipation Factor, 1 MHz	0.015	-	IEC 60250
Comparative Tracking Index	325	V	IEC 60112
Relative Permittivity, 50/60 Hz	3.1	-	IEC 60250
FLAME CHARACTERISTICS			
UL Compliant, 94HB Flame Class Rating	1.6	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 750°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	750	°C	IEC 60695-2-13
INJECTION MOLDING			
Drying Temperature	110 – 120	°C	
Drying Time	2 – 4	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 270	°C	
Nozzle Temperature	240 – 260	°C	
Front - Zone 3 Temperature	245 – 265	°C	
Middle - Zone 2 Temperature	240 – 255	°C	
Rear - Zone 1 Temperature	230 – 245	°C	

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Hopper Temperature	40 – 60	°C	
Mold Temperature	40 – 100	°C	

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