

Envalior Durethan AKV 50 H3.0

PA 66, 50% glass fibers, injection molding, heat-aging stabilized
Former Lanxess product line is now with Envalior.

Physical Properties	Metric	English	Comments
Bulk Density	0.700 g/cc	0.0253 lb/in ³	ISO 60
Density	1.57 g/cc	0.0567 lb/in ³	ISO 1183
Linear Mold Shrinkage, Flow	0.0037 cm/cm	0.0037 in/in	60x60x2; 300 °C / MT 80°C; 600 bar; ISO 294-4
Linear Mold Shrinkage, Transverse	0.0093 cm/cm	0.0093 in/in	60x60x2; 300 °C / MT 80°C; 600 bar; ISO 294-4

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	230 MPa	33400 psi	5 mm/min; ISO 527-1,-2
Elongation at Break	2.5 %	2.5 %	5 mm/min; ISO 527-1,-2
Tensile Modulus	11.6 GPa	1680 ksi	1 mm/min; ISO 527-1,-2
Flexural Strength	360 MPa	52200 psi	2 mm/min; ISO 178-A
Flexural Modulus	15.3 GPa	2220 ksi	2 mm/min; ISO 178-A
Flexural Strain at Break	3.0 %	3.0 %	2 mm/min; ISO 178-A
Izod Impact, Notched (ISO)	13.0 kJ/m ² @Temperature -30.0 °C	6.19 ft-lb/in ² @Temperature -22.0 °F	ISO 180-1A
	15.0 kJ/m ² @Temperature 23.0 °C	7.14 ft-lb/in ² @Temperature 73.4 °F	ISO 180-1A
Izod Impact, Unnotched (ISO)	90.0 kJ/m ² @Temperature 23.0 °C	42.8 ft-lb/in ² @Temperature 73.4 °F	ISO 180-1U
	90.0 kJ/m ² @Temperature -30.0 °C	42.8 ft-lb/in ² @Temperature -22.0 °F	ISO 180-1U
Charpy Impact Unnotched	10.0 J/cm ² @Temperature 23.0 °C	47.6 ft-lb/in ² @Temperature 73.4 °F	ISO 179-1eU
	10.0 J/cm ² @Temperature -30.0 °C	47.6 ft-lb/in ² @Temperature -22.0 °F	ISO 179-1eU
Charpy Impact, Notched	1.40 J/cm ² @Temperature -40.0 °C	6.66 ft-lb/in ² @Temperature -40.0 °F	ISO 179 1eA
	1.50 J/cm ² @Temperature -30.0 °C	7.14 ft-lb/in ² @Temperature -22.0 °F	ISO 179 1eA
	1.70 J/cm ² @Temperature 23.0 °C	8.09 ft-lb/in ² @Temperature 73.4 °F	ISO 179 1eA

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	IEC 60093
Surface Resistance	1.00e+16 ohm	1.00e+16 ohm	IEC 60093
Dielectric Constant	4.4 @Frequency 1e+6 Hz	4.4 @Frequency 1e+6 Hz	IEC 60250

	5.0 @Frequency 100 Hz	5.0 @Frequency 100 Hz	IEC 60250
Dielectric Strength	38.0 kV/mm @Thickness 1.00 mm	965 kV/in @Thickness 0.0394 in	IEC 60243-1
Dissipation Factor	0.023 @Frequency 1e+6 Hz	0.023 @Frequency 1e+6 Hz	IEC 60250
	0.025 @Frequency 100 Hz	0.025 @Frequency 100 Hz	IEC 60250
Comparative Tracking Index	500 V	500 V	Solution A; IEC 60112

Thermal Properties	Metric	English	Comments
Melting Point	262 °C	504 °F	10°C/min; ISO 11357-1,-3
Deflection Temperature at 0.46 MPa (66 psi)	250 °C	482 °F	ISO 75-1,-2
Deflection Temperature at 1.8 MPa (264 psi)	250 °C	482 °F	ISO 75-1,-2
Shrinkage, MD	0.050 % @Treatment Temp. 120 °C, Time 14400 sec	0.050 % @Treatment Temp. 248 °F, Time 4.00 hour	Flow Direction Post-Molding, 60x60x2; ISO 294-4
Shrinkage, TD	0.090 % @Treatment Temp. 120 °C, Time 14400 sec	0.090 % @Treatment Temp. 248 °F, Time 4.00 hour	Post-Molding, 60x60x2; ISO 294-4

Processing Properties	Metric	English	Comments
Melt Temperature	290 °C	554 °F	injection molding; ISO 294
	280 - 300 °C	536 - 572 °F	
Mold Temperature	80.0 °C	176 °F	injection molding; ISO 294
	80.0 - 120 °C	176 - 248 °F	
Drying Temperature	80.0 °C	176 °F	
Dry Time	2.00 - 6.00 hour	2.00 - 6.00 hour	
Moisture Content	0.030 - 0.12 %	0.030 - 0.12 %	Karl Fischer