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Envalior Durethan AKV 30 H3.0

PA 66, 30% 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/in³	ISO 60
Density	1.36 g/cc	0.0491 lb/in³	ISO 1183
Moisture Absorption at Equilibrium	1.9 %	1.9 %	50% RH; ISO 62
Water Absorption at Saturation	5.5 %	5.5 %	ISO 62
Linear Mold Shrinkage, Flow	0.0040 cm/cm	0.0040 in/in	60x60x2; 290 °C / MT 80°C; 600 bar; ISO 294-4
Linear Mold Shrinkage, Transverse	0.011 cm/cm	0.011 in/in	60x60x2; 290 °C / MT 80°C; 600 bar; ISO 294-4

Mechanical Properties	Metric	English	Comments
Puncture Resistance	800 N @Temperature -30.0 °C	180 lb (f) @Temperature -22.0 °F	ISO 6603-2
	1000 N @Temperature 23.0 °C	225 lb (f) @Temperature 73.4 °F	ISO 6603-2
Ball Indentation Hardness	230 MPa	33400 psi	ISO 2093-1
Tensile Strength at Break	185 MPa	26800 psi	5 mm/min; ISO 527-1,-2
Elongation at Break	3.5 %	3.5 %	5 mm/min; ISO 527-1,-2
Tensile Modulus	9.50 GPa	1380 ksi	1 mm/min; ISO 527-1,-2
Flexural Strength	280 MPa	40600 psi	2 mm/min; ISO 178-A
Flexural Yield Strength	260 MPa @Strain 3.5 %	37700 psi @Strain 3.5 %	2 mm/min; ISO 178-A
Flexural Modulus	9.20 GPa	1330 ksi	2 mm/min; ISO 178-A
Flexural Strain at Break	4.2 %	4.2 %	2 mm/min; ISO 178-A
Izod Impact, Notched (ISO)	<= 10.0 kJ/m² @Temperature -30.0 °C	<= 4.76 ft-lb/in² @Temperature -22.0 °F	ISO 180-1A
	10.0 kJ/m² @Temperature 23.0 °C	4.76 ft-lb/in² @Temperature 73.4 °F	ISO 180-1A
Izod Impact, Unnotched (ISO)	55.0 kJ/m² @Temperature -30.0 °C	26.2 ft-lb/in² @Temperature -22.0 °F	ISO 180-1U
	65.0 kJ/m² @Temperature 23.0 °C	30.9 ft-lb/in² @Temperature 73.4 °F	ISO 180-1U

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Charpy Impact Unnotched	6.00 J/cm² @Temperature -30.0 °C	28.6 ft-lb/in² @Temperature -22.0 °F	ISO 179-1eU
	7.50 J/cm² @Temperature 23.0 °C	35.7 ft-lb/in² @Temperature 73.4 °F	ISO 179-1eU
Charpy Impact, Notched	1.00 J/cm² @Temperature 23.0 °C	4.76 ft-lb/in² @Temperature 73.4 °F	ISO 179 1eA
	1.00 J/cm² @Temperature -30.0 °C	4.76 ft-lb/in² @Temperature -22.0 °F	ISO 179 1eA
Puncture Energy	1.90 J @Temperature -30.0 °C	1.40 ft-lb @Temperature -22.0 °F	ISO 6603-2
	2.50 J @Temperature 23.0 °C	1.84 ft-lb @Temperature 73.4 °F	ISO 6603-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	IEC 60093
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	IEC 60093
Dielectric Constant	4.0 @Frequency 1e+6 Hz	4.0 @Frequency 1e+6 Hz	IEC 60250
	4.5 @Frequency 100 Hz	4.5 @Frequency 100 Hz	IEC 60250
Dielectric Strength	40.0 kV/mm @Thickness 1.00 mm	1020 kV/in @Thickness 0.0394 in	IEC 60243-1
Dissipation Factor	0.010 @Frequency 100 Hz	0.010 @Frequency 100 Hz	IEC 60250
	0.018 @Frequency 1e+6 Hz	0.018 @Frequency 1e+6 Hz	IEC 60250
Comparative Tracking Index	525 V	525 V	Solution A; IEC 60112

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	30.0 µm/m-°C @Temperature 23.0 - 55.0 °C	16.7 µin/in-°F @Temperature 73.4 - 131 °F	ISO 11359-1,-2
CTE, linear, Transverse to Flow	90.0 µm/m-°C @Temperature 23.0 - 55.0 °C	50.0 µin/in-°F @Temperature 73.4 - 131 °F	ISO 11359-1,-2
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)	240 °C	464 °F	ISO 75-1,-2

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Deflection Temperature at 8.0 MPa	185 °C	365 °F	ISO 75-1,-2
Vicat Softening Point	>= 230 °C @Load 5.10 kg	>= 446 °F @Load 11.2 lb	120°C/h; ISO 306
	>= 230 °C @Load 5.10 kg	>= 446 °F @Load 11.2 lb	50°C/h; ISO 306
Flammability, UL94	HB @Thickness 1.60 mm	HB @Thickness 0.0630 in	
	HB @Thickness 3.20 mm	HB @Thickness 0.126 in	
Glow Wire Flammability Index	700 °C @Thickness 0.800 mm	1290 °F @Thickness 0.0315 in	IEC 60695-2-12
	700 °C @Thickness 1.60 mm	1290 °F @Thickness 0.0630 in	IEC 60695-2-12
	700 °C @Thickness 3.00 mm	1290 °F @Thickness 0.118 in	IEC 60695-2-12
Shrinkage, MD	0.040 % @Treatment Temp. 120 °C, Time 14400 sec	0.040 % @Treatment Temp. 248 °F, Time 4.00 hour	Flow Direction Post-Molding, 60x60x2; ISO 294-4
Shrinkage, TD	0.10 % @Treatment Temp. 120 °C, Time 14400 sec	0.10 % @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 F