

Envalior Akulon® F-X9183

Low/Medium Viscosity

Former DSM Engineering Plastics product line is now with Envalior.

Physical Properties	Metric	English	Comments
Density	1.13 g/cc	0.0408 lb/in ³	dry; ISO 1183
Water Absorption	10 %	10 %	Sim. To ISO 62
Moisture Absorption	2.80 %	2.80 %	Sim. To ISO 62
Viscosity Number	129 cm ³ /g	1.29 dl/g	ISO 307, 1157, 1628
Linear Mold Shrinkage, Flow	0.0095 cm/cm	0.0095 in/in	ISO 294-4
Linear Mold Shrinkage, Transverse	0.0095 cm/cm	0.0095 in/in	ISO 294-4

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	45.0 MPa	6530 psi	cond; ISO 527-1/-2
	85.0 MPa	12300 psi	dry; ISO 527-1/-2
Elongation at Break	20 %	20 %	dry; ISO 527-1/-2
	>= 50 %	>= 50 %	cond; ISO 527-1/-2
Elongation at Yield	4.0 %	4.0 %	dry; ISO 527-1/-2
	25 %	25 %	cond; ISO 527-1/-2
Tensile Modulus	1.00 GPa	145 ksi	cond; ISO 527-1/-2
	3.20 GPa	464 ksi	dry; ISO 527-1/-2
Flexural Strength	100 MPa	14500 psi	dry; ISO 178
Flexural Modulus	2.60 GPa	377 ksi	dry; ISO 178
Charpy Impact Unnotched	NB	NB	cond; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	cond; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	NB	NB	dry; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	dry; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	0.500 J/cm ²	2.38 ft-lb/in ²	cond; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.500 J/cm ²	2.38 ft-lb/in ²	dry; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.800 J/cm ²	3.81 ft-lb/in ²	dry; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	3.50 J/cm ²	16.7 ft-lb/in ²	cond; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	cond; IEC 60093
	1.00e+15 ohm-cm	1.00e+15 ohm-cm	dry; IEC 60093
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	cond; IEC 60093

Dielectric Constant	3.1	3.1	dry; IEC 60250
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	3.4	3.4	dry; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	4.7	4.7	cond; IEC 60250
Dielectric Strength	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	15	15	cond; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	20.0 kV/mm	508 kV/in	cond; IEC 60243-1
	30.0 kV/mm	762 kV/in	dry; IEC 60243-1
Dissipation Factor	0.0065	0.0065	dry; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.0165	0.0165	dry; IEC 60250
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	0.13	0.13	cond; IEC 60250
Comparative Tracking Index	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	0.39	0.39	cond; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	600 V	600 V	cond; IEC 60112

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	90.0 $\mu\text{m}/\text{m}^{\circ}\text{C}$	50.0 $\mu\text{in}/\text{in}^{\circ}\text{F}$	dry; ISO 11359-1/-2
CTE, linear, Transverse to Flow	100 $\mu\text{m}/\text{m}^{\circ}\text{C}$	55.6 $\mu\text{in}/\text{in}^{\circ}\text{F}$	dry; ISO 11359-1/-2
Melting Point	220 $^{\circ}\text{C}$	428 $^{\circ}\text{F}$	10 $^{\circ}\text{C}/\text{min}$; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	185 $^{\circ}\text{C}$	365 $^{\circ}\text{F}$	dry; ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	65.0 $^{\circ}\text{C}$	149 $^{\circ}\text{F}$	dry; ISO 75-1/-2
Flammability, UL94	V-2	V-2	dry; IEC 60695-11-10
	@Thickness 1.50 mm	@Thickness 0.0591 in	
Oxygen Index	V-2	V-2	dry; IEC 60695-11-10
	@Thickness 0.750 mm	@Thickness 0.0295 in	
Glow Wire Ignition Temperature	26 %	26 %	dry; ISO 4589-1/-2
Glow Wire Ignition Temperature	725 $^{\circ}\text{C}$	1340 $^{\circ}\text{F}$	Glow Wire Ignition Temperature, dry; IEC 60695-2-13
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Glow Wire Ignition Temperature	875 $^{\circ}\text{C}$	1610 $^{\circ}\text{F}$	Glow Wire Ignition Temperature, dry; IEC 60695-2-13
	@Thickness 1.50 mm	@Thickness 0.0591 in	
Glow Wire Flammability Index	960 $^{\circ}\text{C}$	1760 $^{\circ}\text{F}$	Dry; IEC 60695-2-12
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Glow Wire Flammability Index	960 $^{\circ}\text{C}$	1760 $^{\circ}\text{F}$	Dry; IEC 60695-2-12
	@Thickness 1.50 mm	@Thickness 0.0591 in	