

Evonik Corporation Vestamid® E55-S3 Heat & Light Stabilized Nylon 12/PEBA Elastomer

Category : Polymer , Thermoplastic , Elastomer, TPE , Nylon , Nylon 12 , Polyether Block Amide (PEBA)

Material Notes:

Description: Compared to other contending thermoplastic elastomers, PA 12 elastomers are distinguished by the following properties: They have low density. They are highly resistant to chemicals and solvents. They are easy to process and color and are easy to overmold. They can be decorated easily by means of heat transfer printing. They have excellent impact strength at low temperatures. Their hardness and flexibility can be varied over a wide range. They have high elasticity and good recovery. Their mechanical properties are only slightly temperature-dependent. They are free of volatile or migrating plasticizers. Applications: alpine ski boots components, sports shoe soles, pneumatic lines, rolls, technical films. Information provided by degussa.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Evonik-Corporation-Vestamid-E55-S3-Heat-Light-Stabilized-Nylon-12PEBA-Elastomer.php

Physical Properties	Metric	English	Comments
Density	1.03 g/cc	0.0372 lb/in ³	ISO 1183
Water Absorption at Saturation	1.1 %	1.1 %	ISO 62
Viscosity Test	190 cm ³ /g	190 cm ³ /g	Viscosity Number; ISO 307
Linear Mold Shrinkage	0.0060 - 0.011 cm/cm @Thickness 3.00 mm	0.0060 - 0.011 in/in @Thickness 0.118 in	sheet with film gate at rim, mold temperature 80°C
Linear Mold Shrinkage, Transverse	0.0090 - 0.015 cm/cm @Thickness 3.00 mm	0.0090 - 0.015 in/in @Thickness 0.118 in	sheet with film gate at rim, mold temperature 80°C

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	55	55	ISO 868
Tensile Strength at Break	38.0 MPa	5510 psi	ISO 527-1, ISO 527-2
Elongation at Break	>= 200 %	>= 200 %	ISO 527-1, ISO 527-2
Tensile Modulus	0.230 GPa	33.4 ksi	ISO 527-1, ISO 527-2
50% Modulus	0.0170 GPa	2.47 ksi	ISO 527-1, ISO 527-2
Charpy Impact Unnotched	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	ISO 179/1eU
	NB @Temperature 23.0 °C	NB @Temperature 73.4 °F	ISO 179/1eU
	2.20 J/cm ²	10.5 ft-lb/in ²	

Charpy Impact, Notched Mechanical Properties	Metric @Temperature -30.0 °C	English @Temperature -22.0 °F	ISO 179/1eA Comments
	NB	NB	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Creep Modulus, 1000 hours	100 MPa	14500 psi	ISO 899-1

Thermal Properties	Metric	English	Comments
CTE, linear	200 µm/m-°C	111 µin/in-°F	Longitudinal; ISO 11359
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	
CTE, linear, Transverse to Flow	200 µm/m-°C	111 µin/in-°F	ISO 11359
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	
Deflection Temperature at 0.46 MPa (66 psi)	90.0 °C	194 °F	ISO 75-2
Deflection Temperature at 1.8 MPa (264 psi)	45.0 °C	113 °F	ISO 75-1
Vicat Softening Point	100 °C	212 °F	50N; ISO 306
	160 °C	320 °F	10N; ISO 306
Flammability, UL94	HB	HB	
	@Thickness 1.60 mm	@Thickness 0.0630 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+11 ohm-cm	1.00e+11 ohm-cm	Spec.; IEC 60093
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	Spec.; IEC 60093
Dielectric Constant	4.3	4.3	IEC 60250
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	9.5	9.5	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	38.0 kV/mm	965 kV/in	K20/P50; IEC 60243-1
Dissipation Factor	0.095	0.095	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.11	0.11	IEC 60250
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	

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