

Evonik Corporation Vestamid® E40-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: noiseless gears, seals, functional elements of sports shoes, process aids in the extrusion of thermoplastic polyurethanes, films. Information provided by degussa.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Evonik-Corporation-Vestamid-E40-S3-Heat-Light-Stabilized-Nylon-12PEBA-Elastomer.php

| Physical Properties | Metric | English | Comments |
|-----------------------------------|---|--|--|
| Density | 1.01 g/cc | 0.0365 lb/in ³ | ISO 1183 |
| Water Absorption at Saturation | 1.0 % | 1.0 % | ISO 62 |
| Viscosity Test | 190 cm ³ /g | 190 cm ³ /g | Viscosity Number; ISO 307 |
| Linear Mold Shrinkage | 0.0060 - 0.0090 cm/cm @Thickness 3.00 mm | 0.0060 - 0.0090 in/in @Thickness 0.118 in | sheet with film gate at rim, mold temperature 80°C |
| Linear Mold Shrinkage, Transverse | 0.0070 - 0.013 cm/cm @Thickness 3.00 mm | 0.0070 - 0.013 in/in @Thickness 0.118 in | sheet with film gate at rim, mold temperature 80°C |

| Mechanical Properties | Metric | English | Comments |
|---------------------------|-----------------------------|-----------------------------|----------------------|
| Hardness, Shore D | 40 | 40 | ISO 868 |
| Tensile Strength at Break | 17.0 MPa | 2470 psi | ISO 527-1, ISO 527-2 |
| Elongation at Break | >= 200 % | >= 200 % | ISO 527-1, ISO 527-2 |
| Tensile Modulus | 0.0800 GPa | 11.6 ksi | ISO 527-1, ISO 527-2 |
| 50% Modulus | 0.00950 GPa | 1.38 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 |
| | NB | NB | |

| 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 | 60.0 MPa | 8700 psi | ISO 899-1 |

| Thermal Properties | Metric | English | Comments |
|---|--|---|-------------------------|
| CTE, linear | 240 µm/m-°C @Temperature 23.0 - 55.0 °C | 133 µin/in-°F @Temperature 73.4 - 131 °F | Longitudinal; ISO 11359 |
| CTE, linear, Transverse to Flow | 210 µm/m-°C @Temperature 23.0 - 55.0 °C | 117 µin/in-°F @Temperature 73.4 - 131 °F | ISO 11359 |
| Deflection Temperature at 0.46 MPa (66 psi) | 55.0 °C | 131 °F | ISO 75-2 |
| Vicat Softening Point | 60.0 °C | 140 °F | 50N; ISO 306 |
| | 125 °C | 257 °F | 10N; ISO 306 |
| Flammability, UL94 | HB @Thickness 1.60 mm | HB @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 | 4.9 @Frequency 1e+6 Hz | 4.9 @Frequency 1e+6 Hz | IEC 60250 |
| | 7.5 @Frequency 100 Hz | 7.5 @Frequency 100 Hz | IEC 60250 |
| Dielectric Strength | 35.0 kV/mm | 889 kV/in | K20/P50; IEC 60243-1 |
| Dissipation Factor | 0.070 @Frequency 100 Hz | 0.070 @Frequency 100 Hz | IEC 60250 |
| | 0.12 @Frequency 1e+6 Hz | 0.12 @Frequency 1e+6 Hz | IEC 60250 |
| Comparative Tracking Index | 600 V | 600 V | Test Solution A; IEC 60112 |

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