

Lanxess Durethan® AKV 40 H3.0 000000 Nylon 66, Glass Fiber Reinforced

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, 40% Glass Fiber Filled

Material Notes:

PA 66, 40% glass fibers, injection molding, heat-aging stabilized Information provided by LANXESS.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Lanxess-Durethan-AKV-40-H30-000000-Nylon-66-Glass-Fiber-Reinforced.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|---------------|---------------|--|
| Specific Gravity | 1.46 g/cc | 1.46 g/cc | ISO 1183 |
| Moisture Absorption at Equilibrium | 1.7 % | 1.7 % | 50% RH; ISO 62 |
| Water Absorption at Saturation | 4.5 % | 4.5 % | ISO 62 |
| Linear Mold Shrinkage, Flow | 0.00030 cm/cm | 0.00030 in/in | Post-shrinkage, 60x60x2; 120Å°C; 4 hour; ISO 294-4 |
| | 0.0036 cm/cm | 0.0036 in/in | 60x60x2; 280Å°C / MT 80Å°C; 600 bar; ISO 294-4 |
| Linear Mold Shrinkage, Transverse | 0.00090 cm/cm | 0.00090 in/in | Post-shrinkage, 60x60x2; 120Å°C; 4 hour; ISO 294-4 |
| | 0.0092 cm/cm | 0.0092 in/in | 60x60x2; 280Å°C / MT 80Å°C; 600 bar; ISO 294-4 |

| Mechanical Properties | Metric | English | Comments |
|---------------------------|----------------|----------------|---------------------------------|
| Tensile Strength at Break | 145 MPa | 21000 psi | cond.; ISO 527-1, -2; 5 mm/min |
| | 220 MPa | 31900 psi | d.a.m.; ISO 527-1, -2; 5 mm/min |
| Elongation at Break | 3.0 % | 3.0 % | d.a.m.; ISO 527-1, -2; 5 mm/min |
| | 5.0 % | 5.0 % | cond.; ISO 527-1, -2; 5 mm/min |
| Tensile Modulus | 1.30 GPa | 189 ksi | d.a.m.; ISO 527-1, -2; 1 mm/min |
| | 8.80 GPa | 1280 ksi | cond.; ISO 527-1, -2; 1 mm/min |
| Flexural Strength | 240 MPa | 34800 psi | cond., 2 mm/min; ISO 178-A |
| | @Strain 5.00 % | @Strain 5.00 % | |
| Flexural Yield Strength | 330 MPa | 47900 psi | d.a.m., 2 mm/min; ISO 178-A |
| | @Strain 4.00 % | @Strain 4.00 % | |
| Flexural Modulus | 210 MPa | 30500 psi | cond., 2 mm/min; ISO 178-A |
| | @Strain 3.50 % | @Strain 3.50 % | |
| Flexural Modulus | 8.00 GPa | 1160 ksi | cond., 2 mm/min; ISO 178-A |

| Mechanical Properties | Metric MPa | English psi | Comments d.a.m., 2 mm/min; ISO 178-A |
|------------------------------|--------------------------|----------------------------|---|
| Izod Impact, Notched (ISO) | 10.0 kJ/m ² | 4.76 ft-lb/in ² | cond.; ISO 180-1A |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | 14.0 kJ/m ² | 6.66 ft-lb/in ² | d.a.m.; ISO 180-1A |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | 15.0 kJ/m ² | 7.14 ft-lb/in ² | cond.; ISO 180-1A |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| | 17.0 kJ/m ² | 8.09 ft-lb/in ² | d.a.m.; ISO 180-1A |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Izod Impact, Unnotched (ISO) | 90.0 kJ/m ² | 42.8 ft-lb/in ² | d.a.m.; ISO 180-1U |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| | 90.0 kJ/m ² | 42.8 ft-lb/in ² | d.a.m.; ISO 180-1U |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Charpy Impact Unnotched | 8.00 J/cm ² | 38.1 ft-lb/in ² | cond.; ISO 179-1eU |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | 9.00 J/cm ² | 42.8 ft-lb/in ² | d.a.m.; ISO 179-1eU |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | 9.50 J/cm ² | 45.2 ft-lb/in ² | cond.; ISO 179-1eU |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| | 10.0 J/cm ² | 47.6 ft-lb/in ² | d.a.m.; ISO 179-1eU |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Charpy Impact, Notched | 1.00 J/cm ² | 4.76 ft-lb/in ² | d.a.m.; ISO 179-1eA |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | 1.20 J/cm ² | 5.71 ft-lb/in ² | cond.; ISO 179-1eA |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |

| Mechanical Properties | Metric | English | Comments |
|-----------------------------------|--|---|---------------------|
| | 1.50 J/cm ² @Temperature 23.0 Â°C | 1.12e+6 lb/in ² @Temperature 73.4 Â°F | d.a.m.; ISO 179-1eA |
| | 2.00 J/cm ² @Temperature 23.0 Â°C | 9.52 ft-lb/in ² @Temperature 73.4 Â°F | cond.; ISO 179-1eA |
| Tensile Creep Modulus, 1 hour | 7700 MPa | 1.12e+6 psi | cond.; ISO 899-1 |
| Tensile Creep Modulus, 1000 hours | 6800 MPa | 986000 psi | cond.; ISO 899-1 |

| Thermal Properties | Metric | English | Comments |
|--|---|--|----------------------------|
| CTE, linear, Parallel to Flow | 20.0 Âµm/m-Â°C @Temperature 23.0 - 55.0 Â°C | 11.1 Âµin/in-Â°F @Temperature 73.4 - 131 Â°F | ISO 11359-1, -2 |
| CTE, linear, Transverse to Flow | 90.0 Âµm/m-Â°C @Temperature 23.0 - 55.0 Â°C | 50.0 Âµin/in-Â°F @Temperature 73.4 - 131 Â°F | ISO 11359-1, -2 |
| Melting Point | 262 Â°C | 504 Â°F | 10Â°C/min; ISO 11357-1, -3 |
| Deflection Temperature at 0.46 MPa (66 psi) | 250 Â°C | 482 Â°F | ISO 75-1, -2 |
| Deflection Temperature at 1.8 MPa (264 psi) | 250 Â°C | 482 Â°F | ISO 75-1, -2 |
| Vicat Softening Point | >= 230 Â°C @Load 5.10 kg | >= 446 Â°F @Load 11.2 lb | 120Â°C/hour; 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 Test | 600 Â°C @Diameter 2.00 mm | 1110 Â°F @Diameter 0.0787 in | GWIT; IEC 60695-2-13 |

| Electrical Properties | Metric | English | Comments |
|-----------------------|---------------------------|---------------------------|-------------------|
| Volume Resistivity | 1.00e+15 ohm-cm | 1.00e+15 ohm-cm | d.a.m.; IEC 60093 |
| Surface Resistance | 1.00e+15 ohm | 1.00e+15 ohm | d.a.m.; IEC 60093 |
| Dielectric Constant | 4.0 @Frequency 1.00e+6 | 4.0 @Frequency 1.00e+6 | d.a.m.; IEC 60250 |

| Electrical Properties | Hz Metric | Hz English | Comments |
|----------------------------|-----------------------|-----------------------|-------------------------------|
| | 4.9 | 4.9 | d.a.m.; IEC 60250 |
| | @Frequency 100 Hz | @Frequency 100 Hz | |
| Dielectric Strength | 40.0 kV/mm | 1020 kV/in | d.a.m.; IEC 60243-1 |
| | @Thickness 1.00 mm | @Thickness 0.0394 in | |
| Dissipation Factor | 0.026 | 0.026 | d.a.m.; IEC 60250 |
| | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz | |
| | 0.027 | 0.027 | d.a.m.; IEC 60250 |
| | @Frequency 100 Hz | @Frequency 100 Hz | |
| Comparative Tracking Index | 575 V | 575 V | d.a.m.; Solution A; IEC 60112 |

| Processing Properties | Metric | English | Comments |
|-----------------------|----------------|----------------|-----------------------------|
| Melt Temperature | 280 - 300 Â°C | 536 - 572 Â°F | |
| | 290 Â°C | 554 Â°F | for test specimens; ISO 294 |
| Mold Temperature | 80.0 Â°C | 176 Â°F | for test specimens; ISO 294 |
| | 80.0 - 120 Â°C | 176 - 248 Â°F | |
| Drying Temperature | 80.0 Â°C | 176 Â°F | |
| Dry Time | 2 - 6 hour | 2 - 6 hour | |
| Moisture Content | 0.030 - 0.12 % | 0.030 - 0.12 % | residual; Karl Fischer Test |

| Descriptive Properties | Value | Comments |
|------------------------|-----------------------------------|----------|
| ISO Shortname | ISO 1874-PA 66, MHR, 14-120, GF40 | |

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