

HiDura™ D3X NT

Ascend Performance Materials Operations LLC - Polyamide 612

General Information

Product Description

HiDura D3X NT is a high viscosity PA612 grade. It is suitable for monofilament, film and profile extrusion applications; it can also be used for molded applications where high abrasion resistance and ductility are key requirements. It exhibits low moisture absorption, good chemical resistance, dimensional stability, and high impact resilience. PA612 offers a unique balance of thermal, mechanical and physical properties.

General

| | | | |
|-------------------|--------------------------|---|--|
| Material Status | • Commercial: Active | | |
| Availability | • Asia Pacific | • Europe | • North America |
| Features | • Abrasion Resistant | • Chemical Resistant | • High Viscosity |
| Appearance | • Natural Color | | |
| Forms | • Pellets | | |
| Processing Method | • Casting • Extrusion | • Film Extrusion • Injection Molding | • Profile Extrusion • Sheet Extrusion |
| Resin ID | • PA612 | | |

Properties ¹

| Physical | Dry | Conditioned | Unit | Test Method |
|---|----------|-------------|-----------------------|-------------|
| Density | 1.06 | -- | g/cm ³ | ISO 1183 |
| Molding Shrinkage | | | | ISO 294-4 |
| Across Flow : 73°F, 0.0787 in | 1.9 | -- | % | |
| Flow : 73°F, 0.0787 in | 1.7 | -- | % | |
| Water Absorption (Equilibrium, 73°F, 50% RH) | 1.3 | -- | % | ISO 62 |
| Mechanical | Dry | Conditioned | Unit | Test Method |
| Tensile Modulus (73°F) | 305000 | 203000 | psi | ISO 527-1 |
| Tensile Stress (Yield, 73°F) | 8700 | 8990 | psi | ISO 527-2 |
| Tensile Strain (Break, 73°F) | 210 | 300 | % | ISO 527-2 |
| Flexural Modulus (73°F) | 305000 | 203000 | psi | ISO 178 |
| Flexural Stress (73°F) | 9140 | 5370 | psi | ISO 178 |
| Impact | Dry | Conditioned | Unit | Test Method |
| Charpy Notched Impact Strength | | | | ISO 179/1eA |
| -40°F | 1.7 | 2.7 | ft·lb/in ² | |
| -22°F | 1.4 | 2.8 | ft·lb/in ² | |
| 73°F | 1.9 | 3.7 | ft·lb/in ² | |
| Charpy Unnotched Impact Strength | | | | ISO 179/1eU |
| -40°F | No Break | No Break | | |
| -22°F | No Break | No Break | | |
| 73°F | No Break | No Break | | |
| Notched Izod Impact Strength | | | | ISO 180/1A |
| -40°F | 2.0 | 2.6 | ft·lb/in ² | |
| -22°F | 2.1 | 2.6 | ft·lb/in ² | |
| 73°F | 2.5 | 3.3 | ft·lb/in ² | |
| Thermal | Dry | Conditioned | Unit | Test Method |
| Deflection Temperature Under Load (66 psi, Unannealed) | 264 | -- | °F | ISO 75-2/B |
| Deflection Temperature Under Load (264 psi, Unannealed) | 127 | -- | °F | ISO 75-2/A |
| Melting Temperature | 424 | -- | °F | ISO 11357-3 |
| Electrical | Dry | Conditioned | Unit | Test Method |
| Electric Strength (0.0394 in) | 790 | 790 | V/mil | IEC 60243-1 |

Processing Information



| Injection | Dry Unit |
|------------------------|-----------------|
| Drying Temperature | 176 °F |
| Drying Time | 2.0 to 4.0 hr |
| Suggested Max Moisture | 0.15 % |
| Processing (Melt) Temp | 455 to 554 °F |
| Mold Temperature | 122 to 194 °F |

Notes

¹ Typical properties: these are not to be construed as specifications.

