

Amodel® AT-1125 HS

polyphthalamide

Amodel® AT-1125 HS polyphthalamide (PPA) is a toughened, heat stabilized 25% glass reinforced resin, designed as a cost effective solution for applications requiring stiffness, good dimensional stability, chemical resistance and ductility. This resin has a high heat deflection temperature and a high flexural modulus, with greater tensile elongation than untoughened glass-reinforced PPA.

Typical applications include bearings, bearing retainers/cages, housings, chemical processing equipment components, motor frames, sporting equipment, lawn and garden equipment and components that require press-fit or snap-fit assembly.

- Black: AT-1125 HS BK 324

General

| | | |
|---------------------------|--|--|
| Material Status | • Commercial: Active | |
| Availability | • Africa & Middle East • Asia Pacific • Europe | • Latin America • North America |
| Filler / Reinforcement | • Glass Fiber, 25% Filler by Weight | |
| Additive | • Heat Stabilizer | • Impact Modifier |
| Features | • Chemical Resistant • Good Dimensional Stability • Heat Stabilized | • High Heat Resistance • Impact Modified |
| Uses | • Appliance Components • Appliances • Automotive Applications • Automotive Electronics • Automotive Under the Hood • Bearings • Connectors • Fuel Lines | • General Purpose • Housings • Industrial Applications • Industrial Parts • Lawn and Garden Equipment • Machine/Mechanical Parts • Metal Replacement |
| RoHS Compliance | • RoHS Compliant | |
| Automotive Specifications | • ASTM D4000 PA123 G25 • ASTM D4000 PPA0111 G25 KD160 KN075 LD002 PN080 YI250 • ASTM D6779 PA123G25 • ISO 1874 PA6T/6I/66-HI, MH, 12-080, GF25 | |
| Appearance | • Black | |
| Forms | • Pellets | |
| Processing Method | • Injection Molding | |

| Physical | Dry | Conditioned | Unit | Test method |
|--------------------------|------|-------------|-------------------|-------------|
| Density | 1.35 | -- | g/cm ³ | ISO 1183/A |
| Molding Shrinkage | | | | ASTM D955 |
| Flow | 0.40 | -- | % | |
| Across Flow | 0.60 | -- | % | |
| Water Absorption (24 hr) | 0.20 | -- | % | ASTM D570 |

| Mechanical | Dry | Conditioned | Unit | Test method |
|-----------------|------|-------------|------|-------------|
| Tensile Modulus | | | | |
| -- | 8480 | -- | MPa | ASTM D638 |
| -- | 8890 | -- | MPa | ISO 527-2 |

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| Mechanical | Dry | Conditioned | Unit | Test method |
|-------------------------------------|------|-------------|-------------------|---------------------------|
| Tensile Strength | | | | |
| Break | 174 | -- | MPa | ASTM D638 |
| Break | 190 | -- | MPa | ISO 527-2 |
| Tensile Elongation | | | | |
| Break | 3.2 | -- | % | ASTM D638 |
| Break | 2.5 | -- | % | ISO 527-2 |
| Flexural Modulus | | | | |
| -- | 7580 | 7580 | MPa | ASTM D790 |
| -- | 7790 | -- | MPa | ISO 178 |
| Flexural Stress | | | | |
| -- | 240 | -- | MPa | ISO 178 |
| Yield | 255 | 200 | MPa | ASTM D790 |
| Impact | Dry | Conditioned | Unit | Test method |
| Charpy Notched Impact Strength | 8.8 | -- | kJ/m ² | ISO 179/1eA |
| Notched Izod Impact | | | | |
| -- | 120 | 85 | J/m | ASTM D256 |
| -- | 8.8 | -- | kJ/m ² | ISO 180/1A |
| Unnotched Izod Impact | 1100 | 800 | J/m | ASTM D256 |
| Instrumented Dart Impact | | | | ASTM D3763 |
| Energy as Maximum Load ¹ | -- | 1.90 | J | |
| Energy at Maximum Load ² | 2.03 | -- | J | |
| Total Energy | 13.8 | 9.36 | J | |
| Thermal | Dry | Conditioned | Unit | Test method |
| Deflection Temperature Under Load | | | | |
| 0.45 MPa, Unannealed | 279 | -- | °C | ASTM D648 |
| 1.8 MPa, Unannealed | 235 | -- | °C | ASTM D648 |
| 1.8 MPa, Unannealed | 280 | -- | °C | ISO 75-2/A |
| Melting Temperature | 311 | -- | °C | ISO 11357-3 ASTM D3418 |

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| Injection | Dry Unit |
|------------------------|------------------|
| Drying Temperature | 121 °C |
| Drying Time | 4.0 hr |
| Suggested Max Moisture | 0.030 to 0.060 % |
| Hopper Temperature | 79 °C |
| Rear Temperature | 304 to 318 °C |
| Front Temperature | 316 to 329 °C |
| Processing (Melt) Temp | 321 to 343 °C |
| Mold Temperature | 135 °C |

Injection Notes

Storage:

- Amodel® compounds are shipped in moisture-resistant packages at moisture levels according to specifications. Sealed, undamaged bags should be preferably stored in a dry room at a maximum temperature of 50°C (122°F) and should be protected from possible damage. If only a portion of a package is used, the remaining material should be transferred into a sealable container. It is recommended that Amodel® resins be dried prior to molding following the recommendations found in this datasheet and/or in the Amodel® processing guide.

Notes

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

¹ Maximum Load: 230 lb (1020 N)

² Maximum Load: 280 lb (1240 N)

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