# Solvay Specialty Polymers AmodelÂ® A-4160 HSL Polyphthalamide (PPA), 60% Glass Fiber

**Category :** Polymer , Thermoplastic , Polyphthalamide (PPA)

**Material Notes:**

AmodelÂ® A-4160 HSL resin is a 60% glass reinforced, heat stabilized polyphthalamide (PPA) which exhibits high modulus at elevated temperatures, a high heat deflection temperature and exceptional creep resistance. This material was designed for metal replacement applications. Its rapid crystallization and good flow characteristics allow shorter cycles for enhanced molding productivity.Features: Fast Molding Cycle; Good Chemical Resistance; Good Creep Resistance; Good Dimensional Stability; Good Toughness; Heat Stabilized; High Heat Resistance; High Strength; Hot Water Moldability; Low CLTE; Lubricated; Ultra High StiffnessUses: Automotive Applications; Automotive Electronics; Automotive Under the Hood; Camera Applications; Cell Phones; Connectors; Electrical/Electronic Applications; Housings; Industrial Applications; Machine/Mechanical Parts; Metal Replacement; Transmission ApplicationsInjection Molding Notes: AmodelÂ® 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 50Â°C (122Â°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 AmodelÂ® resins be dried prior to molding.Automotive Specifications ASTM D6779 PA102G60Information provided by Solvay Specialty Polymers.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Amodel-A-4160-HSL-Polyphthalamide-PPA-60-Glass-Fiber.php

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Density | 1.75 g/cc | 0.0632 lb/inÂ³ | ISO 1183 |
| Filler Content | 60 % | 60 % | Glass Fiber |
| Water Absorption | 0.19 %<br>@Time 86400 sec | 0.19 %<br>@Time 24.0 hour | ISO 62 |
| Linear Mold Shrinkage, Flow | 0.0050 cm/cm | 0.0050 in/in | ISO 294-4 |
| Linear Mold Shrinkage, Transverse | 0.0080 cm/cm | 0.0080 in/in | ISO 294-4 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Tensile Strength at Break | 79.6 MPa<br>@Temperature 200 Â°C | 11500 psi<br>@Temperature 392 Â°F | 2; ISO 527-2 |
| | 244 MPa<br>@Temperature 23.0 Â°C | 35400 psi<br>@Temperature 73.4 Â°F | 2; ISO 527-2 |
| Elongation at Break | 1.4 %<br>@Temperature 23.0 Â°C | 1.4 %<br>@Temperature 73.4 Â°F | ISO 527-2 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| | @Temperature 200 Â°C | @Temperature 392 Â°F | ISO 527-2 |
| Tensile Modulus | 8.77 GPa<br>@Temperature 200 Â°C | 1270 ksi<br>@Temperature 392 Â°F | 2; ISO 527-2 |
| | 23.3 GPa<br>@Temperature 23.0 Â°C | 3380 ksi<br>@Temperature 73.4 Â°F | 2; ISO 527-2 |
| Flexural Strength | 137 MPa<br>@Temperature 200 Â°C | 19900 psi<br>@Temperature 392 Â°F | 2; ISO 178 |
| | 385 MPa<br>@Temperature 23.0 Â°C | 55800 psi<br>@Temperature 73.4 Â°F | 2; ISO 178 |
| Flexural Modulus | 8.50 GPa<br>@Temperature 200 Â°C | 1230 ksi<br>@Temperature 392 Â°F | ISO 178 |
| | 19.3 GPa<br>@Temperature 23.0 Â°C | 2800 ksi<br>@Temperature 73.4 Â°F | ISO 178 |
| Charpy Impact Unnotched | 13.0 J/cmÂ² | 61.9 ft-lb/inÂ² | Type 1, Edgewise; ISO 179 |
| Charpy Impact, Notched | 1.30 J/cmÂ² | 6.19 ft-lb/inÂ² | Type 1, Edgewise; ISO 179 |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| Deflection Temperature at 1.8 MPa (264 psi) | 304 Â°C | 579 Â°F | Unannealed; ISO 75-2/A |

| Processing Properties | Metric | English | Comments |
|---|---|---|---|
| Rear Barrel Temperature | 318 - 324 Â°C | 604 - 615 Â°F | |
| Front Barrel Temperature | 327 - 332 Â°C | 621 - 630 Â°F | |
| Melt Temperature | 329 - 343 Â°C | 624 - 649 Â°F | |
| Mold Temperature | 65.6 - 93.3 Â°C | 150 - 200 Â°F | |
| Drying Temperature | 120 Â°C<br>@Time 14400 sec | 248 Â°F<br>@Time 4.00 hour | |

| Descriptive Properties | Value | Comments |
|---|---|---|
| Additive | Heat Stabilizer | |

| Descriptive Properties | Value | Comments |
|---|---|---|
| | Lubricant | |
| | Mold Release | |
| Availability | Africa & Middle East | |
| | Asia Pacific | |
| | Europe | |
| | Latin America | |
| | North America | |
| Color | Black | |
| Form | Pellets | |
| Processing Technique | Water-Heated Mold Injection Molding | |
| RoHS Compliance | RoHS Compliant | |

## Contact Songhan Plastic Technology Co.,Ltd.

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