# Amodel® A-1145 DW

## polyphthalamide

Amodel® A-1145 DW is a 45% glass-fiber-reinforced resin designed for high strength and stiffness and improved hydrolytic stability. This material has low moisture absorption and a low coefficient of thermal expansion, which means excellent dimensional stability. Creep resistance is also exceptional.

This grade has been approved for use with potable water in the United States, France, Germany, and the United Kingdom.

- Natural: A-1145 NT DW
- Black: A-1145 BK 937 DW

### General

| | | |
|---|---|---|
| Material Status | • Commercial: Active | |
| Availability | • Africa & Middle East<br>• Asia Pacific<br>• Europe | • Latin America<br>• North America |
| Filler / Reinforcement | • Glass Fiber, 45% Filler by Weight | |
| Features | • Chemical Resistant<br>• Chlorine Resistant<br>• Creep Resistant<br>• Good Dimensional Stability<br>• Good Stiffness | • High Stiffness<br>• High Strength<br>• High Temperature Strength<br>• Low Moisture Absorption |
| Uses | • Appliances<br>• Consumer Applications<br>• Filters<br>• Housings | • Industrial Applications<br>• Plumbing Parts<br>• Pump Parts<br>• Valves/Valve Parts |
| Agency Ratings | • NSF STD-61 [1] | |
| RoHS Compliance | • RoHS Compliant | |
| Appearance | • Black | • Natural Color |
| Forms | • Pellets | |
| Processing Method | • Injection Molding | |

| Physical | Typical Value | Unit | Test method |
|---|---|---|---|
| Density | 1.61 | g/cm³ | ISO 1183/A |

| Mechanical | Typical Value | Unit | Test method |
|---|---|---|---|
| Tensile Modulus | 15100 | MPa | ISO 527-2 |
| Tensile Stress (Yield) | 232 | MPa | ISO 527-2 |
| Tensile Strain (Break, 23°C) | 1.8 | % | ISO 527-2 |
| Flexural Modulus (23°C) | 14000 | MPa | ISO 178 |
| Flexural Stress | 330 | MPa | ISO 178 |

| Impact | Typical Value | Unit | Test method |
|---|---|---|---|
| Charpy Notched Impact Strength | 9.9 | kJ/m² | ISO 179 |
| Notched Izod Impact Strength | 7.8 | kJ/m² | ISO 180 |

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| Thermal | Typical Value | Unit | Test method |
|---|---|---|---|
| Heat Deflection Temperature | | | ISO 75-2/Af |
| 1.8 MPa, Unannealed | 302 | °C | |

| Injection | Typical Value | Unit |
|---|---|---|
| Drying Temperature | 120 | °C |
| Drying Time | 4.0 | hr |
| Suggested Max Moisture | 0.030 to 0.060 | % |
| Rear Temperature | 316 to 329 | °C |
| Middle Temperature | 316 to 329 | °C |
| Front Temperature | 324 to 335 | °C |
| Processing (Melt) Temp | 321 to 343 | °C |
| Mold Temperature | 150 | °C |

## Injection Notes

Mold Temperature:

- Higher tool temperatures might be required for thin wall sections

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] Tested at 82 °C (180 °F) (Commercial Hot)


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