

# Amodel® A-8940 HS

## polyphthalamide

Amodel® A-8940 HS is a 40% glass-fiber-reinforced, heat-stabilized polyphthalamide (PPA) with a high heat deflection temperature and very high tensile strength. Excellent creep resistance and low moisture absorption are also characteristic of this resin.

- Black: A-8940 HS BK 328
- Natural: A-8940 HS NT

### General

|                        |   |   |
|------------------------|---|---|
| Material Status        | • Commercial: Active  |   |
| Availability           | • Africa & Middle East<br>• Asia Pacific<br>• Europe  | • Latin America<br>• North America  |
| Filler / Reinforcement | • Glass Fiber, 40% Filler by Weight   |   |
| Additive               | • Heat Stabilizer   |   |
| Features               | • Chemical Resistant<br>• Creep Resistant<br>• Good Dimensional Stability<br>• Good Stiffness<br>• High Heat Resistance | • High Stiffness<br>• High Strength<br>• High Temperature Strength<br>• Low Moisture Absorption |
| Uses                   | • Appliances<br>• Automotive Applications<br>• Automotive Electronics<br>• Connectors<br>• Consumer Applications        | • Housings<br>• Industrial Applications<br>• Machine/Mechanical Parts<br>• Metal Replacement    |
| Appearance             | • Black   | • Natural Color   |
| Forms                  | • Pellets   |   |
| Processing Method      | • Injection Molding   |   |

| Physical                 | Typical Value | Unit              | Test method |
|--------------------------|---------------|-------------------|-------------|
| Density                  | 1.57          | g/cm <sup>3</sup> | ISO 1183/A  |
| Molding Shrinkage        |               |                   | ASTM D955   |
| Flow                     | 0.34          | %                 |             |
| Across Flow              | 0.68          | %                 |             |
| Water Absorption (24 hr) | 0.15          | %                 | ASTM D570   |

| Mechanical                      | Typical Value | Unit | Test method |
|---------------------------------|---------------|------|-------------|
| Tensile Modulus (23°C)          | 15100         | MPa  | ISO 527-2   |
| Tensile Stress (Break, 23°C)    | 243           | MPa  | ISO 527-2   |
| Tensile Strain (Break, 23°C)    | 2.0           | %    | ISO 527-2   |
| Flexural Modulus (23°C)         | 14500         | MPa  | ISO 178     |
| Flexural Strain at Break (23°C) | 2.6           | %    | ISO 178     |
| Flexural Strength (Break, 23°C) | 357           | MPa  | ISO 178     |

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| Impact                              | Typical Value | Unit              | Test method |
|-------------------------------------|---------------|-------------------|-------------|
| Charpy Notched Impact Strength      |               |                   | ISO 179/1eA |
| -30°C                               | 9.5           | kJ/m <sup>2</sup> |             |
| 23°C                                | 9.7           | kJ/m <sup>2</sup> |             |
| Charpy Unnotched Impact Strength    |               |                   | ISO 179/1eU |
| -30°C                               | 59            | kJ/m <sup>2</sup> |             |
| 23°C                                | 60            | kJ/m <sup>2</sup> |             |
| Notched Izod Impact Strength (23°C) | 10            | kJ/m <sup>2</sup> | ISO 180/A   |
| Unnotched Izod Impact Strength      |               |                   | ISO 180/A   |
| -30°C                               | 55            | kJ/m <sup>2</sup> |             |
| 23°C                                | 59            | kJ/m <sup>2</sup> |             |
| Thermal                             | Typical Value | Unit              | Test method |
| Heat Deflection Temperature         |               |                   |             |
| 0.45 MPa, Unannealed                | 311           | °C                | ISO 75-2/Bf |
| 1.8 MPa, Unannealed                 | 293           | °C                | ISO 75-2/Af |
| Melting Temperature                 | 323           | °C                | ISO 11357-3 |

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| 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       | 170            | °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.

[www.solvay.com](http://www.solvay.com)

[SpecialtyPolymers.EMEA@solvay.com](mailto:SpecialtyPolymers.EMEA@solvay.com) | Europe, Middle East and Africa

[SpecialtyPolymers.Americas@solvay.com](mailto:SpecialtyPolymers.Americas@solvay.com) | Americas

[SpecialtyPolymers.Asia@solvay.com](mailto:SpecialtyPolymers.Asia@solvay.com) | Asia and Australia

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