

# Aegis® H35ZI Nylon 6 Injection Molding Homopolymer

## Description

**Aegis® H35ZI** is an unfilled, low viscosity, non-lubricated nylon 6 injection molding homopolymer exhibiting excellent melt flow properties for filling thin sections and reduced cycle times. Aegis® H35ZI homopolymer exhibits good strength, stiffness and toughness as well as excellent heat, chemical and abrasion resistance.

| Typical Properties                          | Test Method | Unit              | Value           |
|---------------------------------------------|-------------|-------------------|-----------------|
| <b>Parameter</b>                            |             |                   |                 |
| Viscosity, FAV                              | ASTM D-789  |                   | 38 +/- 3        |
| 96% SAV                                     |             |                   | 2.39            |
| Moisture Content                            | ASTM D-6869 | %                 | Max. 0.10       |
| Extractable Content                         | SOP-702-307 | %                 | Max. 0.8        |
| <b>Physical</b>                             |             |                   |                 |
| Density                                     | ASTM D-792  | g/cm <sup>3</sup> | 1.12            |
| Mold Shrinkage Linear Flow                  | ASTM D-955  | %                 | 1.27            |
| Rockwell Hardness, R Scale                  | ASTM D-785  |                   | 119             |
| Moisture (24 Hour)                          | ASTM D-570  | %                 | 1.6             |
| Moisture (50% RH)                           | ASTM D-570  | %                 | 2.7             |
| Moisture (Saturation)                       | ASTM D-570  | %                 | 9.5             |
| Melt Flow Rate, 235°C/1.0 kg (455°F/1.0 kg) | ASTM D-1238 | g/10 min          | 22.7            |
| <b>Mechanical</b>                           |             |                   |                 |
| Tensile Modulus, 23°C (73°F)                | ASTM D-638  | MPa (psi)         | 2,750 (398,854) |
| Tensile Strength, Yield, 23°C (73°F)        | ASTM D-638  | MPa (psi)         | 79 (11,458)     |
| Elongation, Yield, 23°C (73°F)              | ASTM D-638  | %                 | 4.1             |
| Elongation, Break, 23°C (73°F)              | ASTM D-638  | %                 | 75              |
| Flexural Modulus, 23°C (73°F)               | ASTM D-790  | MPa (psi)         | 2,465 (357,518) |
| Flexural Strength, 23°C (73°F)              | ASTM D-790  | MPa (psi)         | 96 (13,924)     |
| <b>Impact</b>                               |             |                   |                 |
| Notched Izod Impact, -40°C (-40°F)          | ASTM D-256  | J/m (ft-lbs/in)   | 45              |
| Notched Izod Impact, 23°C (73°F)            | ASTM D-256  | J/m (ft-lbs/in)   | 46              |
| <b>Thermal</b>                              |             |                   |                 |
| Melting Point                               | ASTM D-3418 | °C (°F)           | 222°C (432°F)   |
| Heat Deflection @ 264 psi (1.8 MPa)         | ASTM D-648  | °C (°F)           | 47°C (117°F)    |
| Heat Deflection @ 66 psi (0.45 MPa)         | ASTM D-648  | °C (°F)           | 152°C (306°F)   |
| Coef. of Linear Thermal Expansion           | ASTM D-831  | µm/mm °C          | 72              |

The values presented in this data sheet are typical values and are not to be interpreted as product specifications.

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## Processing Guidelines

### Material Handling

Aegis® H35ZI homopolymer is supplied in sealed containers and drying prior to processing is not required. However, high moisture is the primary cause of processing problems. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 80°C (176°F) is recommended. Drying time is dependent on moisture level. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your AdvanSix representative.

## Injection Molding Guidelines

### Typical Profile

Melt Temperature: 240-280°C (464-536°F)

Mold Temperature: 80-95°C (176-203°F)

Injection and Packing Pressure: 35-125 bar (500-1500 psi)

### Mold Temperatures

A mold temperature of 80-95°C (176-203°F) is recommended, but temperatures as low as 10°C (50°F) can be used where applicable.

### Pressures

Injection pressure controls the filling of the part and should not be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

### Fill Rate

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and to prevent premature freezing.

Note: The values in this data sheet are for natural color resins only. Colorants or other additives may alter some or all of these properties. The data listed here fall within the normal range of product properties, but should not be used to establish specification limits nor used alone as the basis of design.

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### Contact AdvanSix

To learn more about the benefits of  
of Aegis® Nylon Resins, visit

[AdvanSix.com/NylonSolutions](https://www.advanSix.com/NylonSolutions) or call:

**1-844-890-8949** (toll free, U.S./Can.)

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