

Strator® A-3 HI N7

polyamide 66

Strator® A-3 HI N7 is a high impact, 30 % long glass fiber reinforced, easy-flowing PA66 with a pellet length of 7 mm which can be processed on most injection molding machines.

This material achieves extremely high mechanical and thermal properties, in combination with ease of processing

and fast cycle times. It exhibits high strength, stiffness and impact strength at high temperatures; excellent creep and fatigue resistance; isotropic mechanical properties and reduced isotropic shrinkage; high shear strength and high burst pressure; and an excellent surface finish.

General

| | |
|------------------------|---|
| Material Status | • Commercial: Active |
| Availability | <ul style="list-style-type: none"> • Africa & Middle East • Asia Pacific • Europe • Latin America • North America |
| Filler / Reinforcement | • Long Glass Fiber, 30% Filler by Weight |
| Features | <ul style="list-style-type: none"> • Creep Resistant • Electrically Insulating • Fatigue Resistant • High Impact Resistance • High Rigidity • High Stiffness • High Tensile Strength • Hot Water Moldability • Low CLTE • Low Warpage |
| Uses | <ul style="list-style-type: none"> • Aircraft Applications • Automotive Applications • Automotive Instrument Panel • Gears |
| Appearance | • Natural Color |
| Forms | • Pellets |

| Physical | Typical Value | Unit | Test method |
|--|---------------|-------------------|-----------------|
| Density | 1.33 | g/cm ³ | ISO 1183 |
| Molding Shrinkage - Flow ¹ | 0.40 | % | Internal Method |
| Water Absorption (Equilibrium, 23°C, 50% RH) | 1.7 | % | ISO 62 |

| Mechanical | Typical Value | Unit | Test method |
|------------------------------|---------------|------|-------------|
| Tensile Modulus (23°C) | 10000 | MPa | ISO 527-2 |
| Tensile Stress (Break, 23°C) | 190 | MPa | ISO 527-2 |
| Tensile Strain (Break) | 2.9 | % | ISO 527-2 |
| Flexural Modulus (23°C) | 9500 | MPa | ISO 178 |
| Flexural Stress (23°C) | 230 | MPa | ISO 178 |

| Impact | Typical Value | Unit | Test method |
|---|---------------|-------------------|-------------|
| Charpy Notched Impact Strength (23°C) | 45 | kJ/m ² | ISO 179 |
| Charpy Unnotched Impact Strength (23°C) | 100 | kJ/m ² | ISO 179 |

| Thermal | Typical Value | Unit | Test method |
|-----------------------------|---------------|------|-------------|
| Heat Deflection Temperature | | | |
| 0.45 MPa, Unannealed | 255 | °C | ISO 75-2/B |
| 1.8 MPa, Unannealed | 250 | °C | ISO 75-2/A |

Strator® A-3 HI N7

polyamide 66

| Electrical | Typical Value | Unit | Test method |
|-----------------------------|---------------|-------|-------------|
| Surface Resistivity | 1.0E+12 | ohms | ASTM D257 |
| Electric Strength (2.00 mm) | 35 | kV/mm | IEC 60243-1 |
| Comparative Tracking Index | 500 | V | IEC 60112 |

| Injection | Typical Value | Unit |
|------------------------|---------------|------|
| Drying Temperature | 110 | °C |
| Drying Time | 4.0 | hr |
| Suggested Max Moisture | 0.10 | % |
| Rear Temperature | 270 to 300 | °C |
| Middle Temperature | 270 to 300 | °C |
| Front Temperature | 285 to 310 | °C |
| Nozzle Temperature | 285 to 320 | °C |
| Processing (Melt) Temp | < 310 | °C |
| Mold Temperature | 80 to 160 | °C |

Injection Notes

Pre-Drying

Since polyamides are hygroscopic materials as well as sensitive to moisture during processing, this product should always be pre-dried. At a humidity content above 0.1%, the material will begin to degrade. Recommended drying time is 4 hours at 110°C in dry-air dryer.

Processing temperatures

Melt temperature should be kept below 310°C in order to prevent degradation. The exact setting depends from machine and mold design, but is usually within the following range:

Area | Recommendation:

Zone 1 (feed) 270-300°C | 280°C

Zone 2 270-300°C | 290°C

Zone 3 285-310°C | 295°C

Zone 4 (Nozzle) 285-320°C | 300°C

Mold temperature

The mold temperature is a compromise between the optimum properties that can be obtained from high crystallization, and cycle time. Strator® A-3 HI N7 can be processed at mold temperatures between 80°C and 160°C. Optimum surface quality requires a mold temperature above 100°C.

Regrind

Regrind of highly filled thermoplastic materials, such as Strator® A-3 HI N7, should only be recycled with special care. The regrind content must never exceed 15% and only regrind of optimum quality should be used. In any case, part properties should be checked.

Strator® A-3 HI N7

polyamide 66

Notes

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

¹ Tested in accordance with S.O.P. methods



Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

Neither Solvay Specialty Polymers nor any of its affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this product, related information or its use. Some applications of which Solvay's products may be proposed to be used are regulated or restricted by applicable laws and regulations or by national or international standards and in some cases by Solvay's recommendation, including applications of food/feed, water treatment, medical, pharmaceuticals, and personal care. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for use in implantable medical devices. The user alone must finally determine suitability of any information or products for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infringed. The information and the products are for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right.

All trademarks and registered trademarks are property of the companies that comprise the Solvay Group or their respective owners.

© 2019 Solvay Specialty Polymers. All rights reserved.