

MATERIAL SPECIFICATIONS

PA 820-MF

Preliminary

HIGHLIGHTS

- Mineral fiber filled nylon 11
- Parts exhibit excellent stiffness and mechanical properties
- Higher temperature tolerance compared to standard nylon 12's
- Easy to process on EOS plastics machines, and machines with a Multizone heating system from Integra.

APPLICATIONS

- Automotive engine components
- Mold and tooling applications
- High performance motorsports and outdoor recreation
- Ideal for rugged applications requiring stiffness at sustained elevated temperatures

TYPICAL PHYSICAL PROPERTIES

| PROPERTY | TEST METHOD | U.S. Standard | METRIC |
|--------------------------------|-------------------|--------------------------|------------------------|
| Color/Appearance | Visual | Light Grey | Light Grey |
| Bulk Density | ASTM D1895 | 0.277 oz/in ³ | 0.48 g/cm ³ |
| Average Particle Size (D50) | Laser Diffraction | 0.002 inches | 50 microns |
| Particle Size Range (D10-D90) | Laser Diffraction | 0.001 - 0.003 inches | 38 - 78 microns |
| Sintered Part Density | ASTM D792 | 0.723 oz/in ³ | 1.25 g/cm ³ |
| Heat Deflection Temperature | ASTM D648 | Testing in Progress | Testing in Progress |
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| Ultimate Tensile Strength (XY) | ASTM D638 | 7,832 psi | 54 MPa |
| Tensile Modulus (XY) | ASTM D638 | 531,128 psi | 3,662 MPa |
| Flexural Modulus (XY) | ASTM D790 | 253,961 psi | 1,751 MPa |
| Elongation at Break (XY) | ASTM D638 | 7% | 7% |
| Flexural Strength (XY) | ASTM D790 | 7,681 psi | 53 MPa |
| Shore Hardness (Shore "D") | ASTM D2240 | 76 | 76 |

For reference use only. Actual properties may vary significantly from those listed above based on processing parameters, operating conditions and end use applications. The above properties were based on virgin ALM PA 820-MF using normal processing parameters on a 2500+ platform as outlined in the ALM Material Processing Guide. Advanced Laser Materials, LLC makes no warranties of materials for any application, nor does it make a warranty of any type, expressed or implied, but not limited to, the warranties of merchantability for a particular purpose.

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