

HP PA12 is a versatile, high-density thermoplastic known for its excellent balance of strength, durability, and detail resolution. Designed for Multi Jet Fusion (MJF) 3D printing, it delivers consistent performance across a wide range of functional applications. PA12 is ideal for producing strong, lightweight parts with fine feature detail, making it a go-to material for both prototyping and end-use production.

Produce strong, functional, detailed complex parts

- Robust thermoplastic produces high-density parts with balanced property profiles and strong structures
- Provides excellent chemical resistance to oils, greases, aliphatic hydrocarbons, and alkalies²
- Ideal for complex assemblies, housings, enclosures, and watertight applications
- Biocompatibility certifications - meets USP Class I-VI and US FDA guidance for intact Skin Surface Devices³

Actual part properties may vary slightly from those listed above based on processing parameters, operating conditions, and material usage.

Technical specifications

| Category | Measurement | Value | Method |
|------------------------------|---|-------------------------|-------------------------|
| General properties | Powder melting point (DSC) | 187°C/369°F | ASTM D3418 |
| | Particle size | 60 µm | ASTM D3451 |
| | Bulk density of powder | 0.425 g/cm ³ | ASTM D1895 |
| | Density of parts | 1.01 g/cm ³ | ASTM D792 |
| Mechanical properties | Tensile strength, max load, ⁹ XY | 48 MPa/6960 psi | ASTM D638 |
| | Tensile strength, max load, ⁹ Z | 48 MPa/6960 psi | ASTM D638 |
| | Tensile modulus, ⁹ XY | 1700 MPa/247 ksi | ASTM D638 |
| | Tensile modulus, ⁹ Z | 1800 MPa/261 ksi | ASTM D638 |
| | Elongation at break, ⁹ XY | 20% | ASTM D638 |
| | Elongation at break, ⁹ Z | 15% | ASTM D638 |
| | Flexural strength (@5%), ¹⁰ XY | 65 MPa/9425 psi | ASTM D790 |
| | Flexural strength (@5%), ¹⁰ Z | 70 MPa/9425 psi | ASTM D790 |
| | Flexural modulus, ¹⁰ XY | 1730 MPa/251 psi | ASTM D790 |
| | Flexural modulus, ¹⁰ Z | 1730 MPa/251 psi | ASTM D790 |
| | Izod impact notched (@3.2mm, 23°C), XYZ | 3.5 kJ/m ² | ASTM D256 Test Method A |
| Thermal properties | Heat deflection temperature (@0.45 MPa, 66 psi), XY | 175°C/347°F | ASTM D648 Test Method A |
| | Heat deflection temperature (@0.45 MPa, 66 psi), Z | 175°C/347°F | ASTM D648 Test Method A |
| | Heat deflection temperature (@1.82 MPa, 264 psi), XY | 95°C/203°F | ASTM D648 Test Method A |
| | Heat deflection temperature (@1.82 MPa, 264 psi), XY | 106°C/223°F | ASTM D648 Test Method A |
| Certifications | USP Class I-VI and US FDA guidance for Intact Skin Surface Devices, RoHS ¹¹ , EU REACH, PAHs | | |