HP 3D High Reusability PA 12

Strong, lowest cost,¹ quality parts

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 alkalies.²
• Ideal for complex assemblies, housings, enclosures, and watertight applications.
• Biocompatibility certifications—meets USP Class I-VI and US FDA guidance for Intact Skin Surface Devices.³

Quality at the lowest cost per part¹

• Achieve the lowest cost per part¹ and reduce your total cost of ownership.⁴
• Minimize waste—reuse surplus powder batch after batch and get functional parts, no throwing away anymore.⁵
• Get consistent performance while achieving 80% surplus powder reusability.⁶
• Optimize cost and part quality—cost-efficient material with industry-leading surplus powder reusability.⁵

Engineered for HP Multi Jet Fusion technology

• Designed for production of functional parts across a variety of industries.
• Provides the best balance between performance and reusability.⁷
• Achieves watertight properties without any additional post-processing.
• Engineered to produce final parts and functional prototypes with fine detail and dimensional accuracy.

For more information, please visit hp.com/go/3DMaterials
1. Based on internal testing and public data for solutions on market as of April, 2016. Cost analysis based on: standard solution configuration price, supplies price, and maintenance costs recommended by manufacturer. Common cost criteria: using HP 3D High Reusability PA 12 material, and the powder reusability ratio recommended by manufacturer. HP Jet Fusion 3D 4200 Printing Solution average printing cost per part is half the average cost of comparable fused deposition modelling (FDM) and selective laser sintering (SLS) printer solutions from $100,000 to $300,000 USD. Cost criteria: printing 1 build chamber per day/5 days per week over 1 year of 10 cm³ parts at 10% packing density. HP Jet Fusion 3D 4210 Printing Solution average printing cost per part is 65% lower versus the average cost of comparable FDM and SLS printer solutions from $100,000 to $300,000 USD and is 50% lower versus the average cost of comparable SLS printer solutions for $300,000 to $450,000 USD. Cost criteria: printing 1 full build chamber of parts per day/5 days per week over 1 year of 10 cm³ parts at 10% packing density on fast print mode.

2. Tested with diluted alkalies, concentrated alkalies, chlorine salts, alcohol, ester, ethers, ketones, aliphatic hydrocarbons, unleaded petrol, motor oil, aromatic hydrocarbons, toluene, and DOT 3 brake fluid.

3. Based on HP internal testing, June 2017, HP 3D Ecoving and Detailing Agents and HP 3D High Reusability PA 12 powder meet USP Class I-VI and US FDA’s guidance for Intact Skin Surface Devices, RoHS, EU REACH, PAHs, UL 94, UL 746A , Statement of Composition for Toy Applications.

4. Compared to selective laser sintering (SLS) and fused deposition modeling (FDM) technologies, HP Multi Jet Fusion technology can reduce the overall energy requirements needed to attain full fusing and reduce the heating power than SLS systems for better material properties and material reuse rates, minimizing waste.

5. Based on using recommended packing densities and compared to selective laser sintering (SLS) technology, offers excellent reusability without sacrificing mechanical performance. Tested according to ASTM D3638, ASTM D256, ASTM D790, and ASTM D648 and using a 3D scanner for dimensional accuracy.

6. HP Jet Fusion 3D printing solutions using HP 3D High Reusability PA 12 provide 80% post-production surplus powder reusability, producing functional parts batch after batch. For testing, material is aged in real printing conditions and powder is tracked by generations (worst case for reusability). Parts are then made from each generation and tested for mechanical properties and accuracy.

7. Compared to selective laser sintering (SLS) printer solutions. Tested according to ASTM D638, ASTM D256, ASTM D790, and ASTM D648. The following technical information should be considered representative of averages or typical values and should not be used for specification purposes. These values are with FW TATDAG_15_11.69 and have been obtained from a sample of specimens printed in plots with 6% packing density. Separation between specimens in the plot was 10 mm. Modulus has been calculated using the slope of the regression line between 0.05% and 0.25% strain measured with an electronic extensometer during the entire test. Cross-section dimension measures using a micrometer with round ends. Conditioning according to ASTM D618 Procedure A. Testing conducted 48 hours after printing and unpacking of the parts at 23°C/73°F and 50% RH. Orientations defined according to ASTM F2971.

8. For testing, material is aged in real printing conditions and powder is tracked by generations (worst case for reusability). Parts are then made from each generation and tested for mechanical properties and accuracy.

9. Test results realized under the ASTM D638 with a test rate of 10 mm/min, specimens type V.

10. Test results realized under ASTM D790 Procedure B at a test rate of 13.55 mm/min.

11. Dimensional accuracy of ±0.2 mm/0.008 inches on XY for hollow parts below 100 mm/3.94 inches and ±0.2% for hollow parts over 100 mm/3.94 inches, using HP 3D High Reusability PA 12 material, measured after sandblasting.

12. RoHS certification for EU, Bosnia-Herzegovina, China, India, Japan, Jordan, Korea, Serbia, Singapore, Turkey, Ukraine, Vietnam.

13. Additional material management equipment is required.

14. Levers refers to the materials container size and the actual materials volume. Materials are measured in kilograms.

15. The HP powder and agents do not meet the criteria for classification as hazardous according to Regulation (EC) 1272/2008 as amended.

16. Additional material management equipment is required.

17. Compared to PA 12 materials available as of June, 2017, HP Jet Fusion 3D printing solutions using HP 3D High Reusability PA 12 provide 80% post-production surplus powder reusability, producing functional parts batch after batch.

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