

HP 3D High Reusability PA 12, enabled by Evonik and HP 3D High Reusability PA 12 S, enabled by Arkema: A Comparative Analysis



3D parts printed with HP 3D High Reusability PA 12 S,
enabled by Arkema

Data courtesy of Decathlon

Data courtesy of Bega



Specifications	HP 3D High Reusability PA 12, enabled by Evonik	HP 3D High Reusability PA 12 S, enabled by Arkema
Ideal for	Customers that need to produce strong, low-cost functional parts with performance results and reduced carbon footprint	Customers that need to produce premium surface parts with lower variable costs, while minimizing waste through high reusability materials that help reduce environmental impact
Compatibility with HP Jet Fusion 3D Printing Solutions and Printers and HP Jet Fusion 3D Components and Accessories	HP Jet Fusion 5600 Series 3D Printing Solution HP Jet Fusion 5200 Series 3D Printing Solution HP Jet Fusion 5000 3D Printer HP Jet Fusion 4200 Series 3D Printing Solution HP Jet Fusion 5200 Series 3D Automatic Unpacking Station HP Jet Fusion 3D Powder Handling Automation Solution HP Jet Fusion 3D Automation Accessory	HP Jet Fusion 5600 Series 3D Printing Solution ¹ HP Jet Fusion 5200 Series 3D Printing Solution HP Jet Fusion 5200 Series 3D Automatic Unpacking Station HP Jet Fusion 3D Automation Accessory
Smoothness	■	★ (Improved by 70% in all faces and by 50% on the bottom face)
Costs	●	★ ²
Reusability ratio ²	80%	85% ³
Recycling programs available	Virtucycle	Virtucycle
Applications	Automotive Eyewear O&P requiring ductile material Parts with small features	Consumer goods (Lighting, aesthetic covers, merchandising, etc) Dental molds Industrial (jigs & fixtures) O&P with low ductility requirements Volume prototyping
Mechanical properties	★	● (Limitations in small features)
Dimensional properties	Same	

★ Best ● Good ■ Fair

1. Available in Spring 2024.

2. Cost analysis based on standard solution configuration price, supplies price, and maintenance costs recommended by HP, comparing HP 3D HR PA 12, enabled by Evonik and HP 3D HR PA12 S, enabled by Arkema (both using Balanced print mode) and power reusability recommended by HP. Cost criteria: printing 5 full builds per week, 220 working days per year, 36 cc part volume, 7% packing density, and 80 parts per build.

3. HP Jet Fusion 3D Printing Solutions using HP 3D High Reusability PA 12, enabled by Evonik provide up to 80% powder reusability ratio, 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. HP Jet Fusion 3D Printing Solutions using HP 3D High Reusability PA 12 S, enabled by Arkema, provide up to 85% powder reusability ratio, 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.

