

MultiJet Fusion 3D Printing materials





HP 3D Printing materials for HP Jet Fusion 5200/4200 Series 3D Printing Solutions

In addition to our flagship material, HP 3D High Reusability PA 12, HP is growing its portfolio of thermoplastics. Powders such as HP 3D High Reusability PA 12 Glass Beads and HP 3D High Reusability PA 11, deliver optimal mechanical properties. Engineered for HP Multi Jet Fusion technology, these materials test the limits of functional part creation, optimizing cost and part quality, while also delivering high and, in many cases, industry-leading reusability at a low cost per part. Our latest addition to the portfolio, HP 3D High Reusability PP enabled by BASF provides our best value HPD material and delivers consistent performance with up to 100% surplus powder reusability. We've also added HP 3D High Reusability TPA enabled by Evoltech that produces flexible and lightweight parts with enhanced rebound resilience with an easy-to-process elastomer, with high part uniformity.

HP 3D High Reusability PA 11—ideal for producing ductile quality parts

Produce strong, ductile,⁸ functional parts

- Thermoplastic material delivering optimal mechanical properties
- Provides excellent chemical resistance⁹ and enhanced elongation-at-break⁸
- Impact resistance and ductility⁸ for prostheses, insoles, sports goods, snap fits, living hinges, and more
- Biocompatibility—meets USP Class I-VI and US FDA guidance for Intact Skin Surface Devices¹⁰

Minimize waste with a renewable raw material¹¹

- Renewable raw material from vegetable castor oil (reduced environmental impact)¹¹
- Minimize waste—reuse surplus powder batch after batch and get functional parts, no throwing away anymore²
- Get consistent performance while achieving up to 70% surplus powder reusability²
- Optimize cost and part quality—cost-efficient material with industry-leading surplus powder reusability

Engineered for HP Multi Jet Fusion technology

- Designed for production of functional and final parts across a variety of industries
- Provides the best balance between performance and reusability²
- Easy-to-process material enables high productivity and less waste²
- Engineered to reliably produce final parts and functional prototypes with fine detail, dimensional accuracy



Data courtesy of OT4 Orthopädietechnik GmbH

Data courtesy of Bowman - Additive Production

	Value	Method
Powder melting point (DSC)	202° C 396° F	ASTM D3418
Particle size	54 µm	ASTM D3451
Bulk density of powder	0.48 g/cm ³ 0.017 lb/in ³	ASTM D1895

HP 3D High Reusability PA 12— ideal for producing strong, low-cost quality parts

Produce strong, functional, detailed complex parts

- Robust thermoplastic produces high-density parts with balanced property profiles and strong structures
- Provides good chemical resistance to oils, greases, aliphatic hydrocarbons, and alkalis⁹
- Ideal for complex assemblies, housings, enclosures, and watertight applications
- Biocompatibility—meets USP Class I-VI and US FDA guidance for Intact Skin Surface Devices⁹

Quality at a low cost per part³

- Achieve a low cost per part and reduce your total cost of ownership⁵
- Minimize waste—reuse surplus powder batch after batch and get functional parts, no throwing away anymore
- Get consistent performance while achieving up to 80% surplus powder reusability⁶
- Optimize cost and part quality—cost-efficient material with industry-leading surplus powder reusability

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 reusability⁷
- Achieves watertight properties without any additional post-processing
- Engineered to produce final parts and functional prototypes with fine detail and dimensional accuracy



	Value	Method
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 0.015 lb/in ³	ASTM D1895

HP 3D High Reusability PA 12 Glass Beads— ideal for producing stiff, dimensionally stable, quality parts

Produce stiff, functional parts

- 40% glass bead filled thermoplastic material with both optimal mechanical properties and high reusability
- Provides dimensional stability along with repeatability⁸
- Ideal for applications requiring high stiffness like enclosures and housings, fixtures and tooling

Quality and high reusability⁴

- Less waste—reuse surplus powder batch after batch and get functional parts, no throwing away anymore
- Get consistent performance while achieving up to 70% surplus powder reusability⁹
- Optimize cost and part quality—cost-efficient material with high surplus powder reusability

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 reusability⁷
- Engineered to produce common glass bead applications with detail and dimensional accuracy



	Value	Method
Powder melting point (DSC)	186° C 367° F	ASTM D3418
Particle size	58 µm	ASTM D3451
Bulk density of powder	0.48 g/cm ³ 0.017 lb/in ³	ASTM D1895

HP 3D High Reusability PP enabled by BASF⁴— ideal for producing chemical resistant,²¹ weldable, low moisture absorption, functional parts

Genuine, functional PP parts

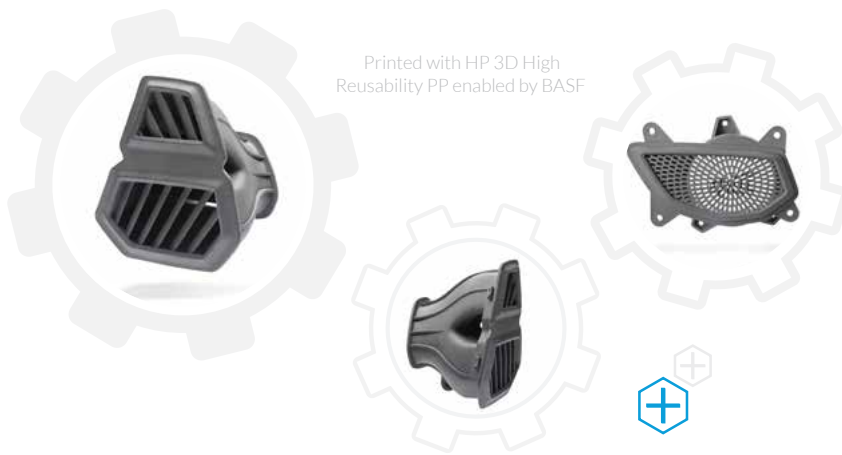
- Get the same properties as many commonly used PPs with this genuine polypropylene material
- Accelerate your product development process using the same prototyping material as the final part
- Biocompatibility—meets ISO 10993 and US FDA Intact Skin Surface Devices Statements⁹

Chemical resistance²¹ low moisture absorption

- Excellent chemical resistance and low moisture absorption ideal for piping or fluid systems and containers²¹
- Outstanding welding capabilities with other PP parts produced with traditional methods like injection molding
- Versatile material ideal for a wide range of automotive, industrial, consumer goods, medical¹⁰ applications

Lowest cost HP 3D material for HP Multi Jet Fusion

- Our best value HP 3D material delivers consistent performance with up to 100% surplus powder reuse⁸
- Provides the optimal balance between performance and cost²
- Easy-to-process material enables high productivity and less waste³



	Value	Method
Powder melting point (DSC)	138° C 280° F	ASTM D3418
Particle size	62 µm	ASTM D3451
Bulk density of powder	0.34 g/cm ³ 0.012 lb/in ³	ASTM D1895

HP 3D High Reusability TPA enabled by Evonik⁶— ideal for producing easy-to-process, flexible, lightweight⁷ parts

Flexible and lightweight⁷ parts with enhanced rebound resilience

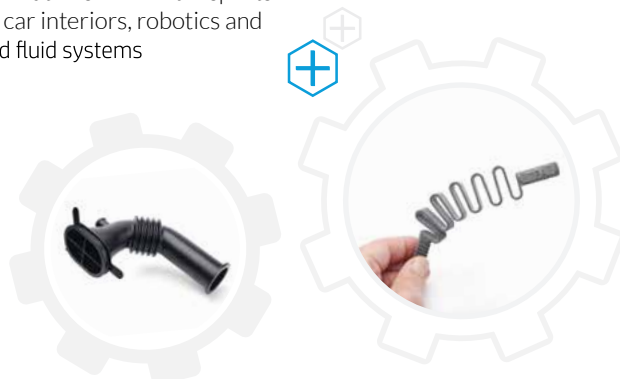
- Enhanced rebound resilience and elongation-at-break with lighter parts
- Optimal mechanical resistance at low temperature
- Ideal for applications like winter sports equipment, car interiors, robotics and grippers, and fluid systems

Elastomer with high part uniformity

- A flexible polyamide (PA)—one of the most used additive manufacturing materials—in a thermoplastic elastomer
- High level of detail and color uniformity

Easy to process

- Smooth workflow is comparable to using other PAs, with a simple printing process and easy cleanup of complex parts
- Fastest time-to-part compared to other HP3D Printing materials²⁴
- Robust parts withstand the cleaning process
- Get consistent performance while achieving 80% surplus powder reusability²⁵



	Value	Method
Powder melting point (DSC)	152° C 305.6° F	ASTM D3418
Particle size	77 µm	ASTM D3451
Bulk density of powder	0.420 g/cm ³ 0.015 lb/in ³	ASTM D1895

	HP 3D Printing Materials for HP Jet Fusion 5200 Series 3D Printing Solutions					HP 3D Printing Materials for HP Jet Fusion 4200 Series 3D Printing Solutions					HP 3D Printing Materials for HP Jet Fusion 500/300 Series 3D Printers
	HP 3D HR PA 11	HP 3D HR PA 12	HP 3D HR PA 12 GB	HP 3D HR PP enabled by BASF	BASF Ultrasint® TPU01	HP 3D HR PA 11	HP 3D HR PA 12	HP 3D HR PA 12 GB	HP 3D HR TPA enabled by Evonik	ESTANE® 3D TPU M95A	HP 3D HR CB PA 12
Stiffness	●	●	★	■	▲	●	●	★	▲	▲	●
Impact resistance	●	■	▲	■	★	●	■	▲	★	★	■
Elongation	●	■	▲	■	★	●	■	▲	★	★	■
Dimensional capability	●	★	●	■	■	●	★	●	■	■	■
Level of detail	★	●	●	■	■	★	●	●	●	■	●
Flat part	■	●	★	▲	■	■	●	★	■	■	●
Temperature resistance	▲	■	●	■	▲	▲	■	●	■	●	■
Chemical resistance ²¹	●	●	In testing	★	■	●	●	In testing	▲	In testing	●
Low moisture absorption	▲	▲	▲	★	■	▲	▲	▲	■	■	▲
Lightweight	●	●	■	★	▲	●	●	■	● ⁷	▲	●

★ Best ● Good ■ Fair ▲ Notrecommended

DESIGN

ADDITIVE MANUFACTURING

METROLOGY



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