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PA12

GLASS BEADS

STIFF LOW-COST QUALITY PARTS

PRODUCE STIFF, FUNCTIONAL PARTS

- 40% glass bead filled thermoplastic material with both optimal mechanical properties and high reusability. (1)
- Provides dimensional stability along with repeatability. (2)
- Ideal for applications requiring high stiffness like enclosures and housings, fixtures and tooling.

QUALITY AT A LOW COST PER PART

- Produce at a low cost per part and reduce your total cost of ownership. (3)
- Less waste—reuse surplus powder batch after batch and get functional parts, no throwing away anymore. (1)
- Get consistent performance while achieving 70% surplus powder reusability. (4)
- Optimize cost and part quality—cost-efficient material with high surplus powder reusability. (1)

ENGINEERED FOR HP MULTI JET FUSION TECHNOLOGY

- Designed for production of functional parts across a variety of industries.
- Get consistent performance while achieving 70% surplus powder reusability. (5)
- Engineered to produce common glass bead applications with detail and dimensional accuracy.

ECO HIGHLIGHTS

- Powders and agents are not classified as hazardous (9)
- Cleaner, more comfortable workplace—enclosed printing system, and automatic powder management (10)
- Minimizes waste due to high reusability of powder (11)

CATEGORY	MEASUREMENT	VALUE	METHOD
General Properties			
	Powder melting point (DSC)	186 °C/367 °F	ASTM D-3418
	Particle size	58 µm	ASTM D-3451
	Bulk density of powder	0.48 g/cm^3	ASTM D-1895
	Density of parts	1.30 g/cm^3	ASTM D-792
Mechanical Properties			
	Tensile Strength, Max Load[7]-XY	30 MPa/4350 psi	ASTM D-638
	Tensile Strength, Max Load[7]-Z	30 MPa/4350 psi	ASTM D-638
	Tensile Modulus[7]-XY	2800 MPa/406 ksi	ASTM D-638
	Tensile Modulus[7]-Z	2900 MPa/421 ksi	ASTM D-638
	Elongation at Break[7]-XY	6.5%	ASTM D-638
	Elongation at Break[7]-Z	6.5%	ASTM D-638
	Izod impact notched (@ 3.2 mm, 23 °C), XYZ	2.7 Kj/m^2	ASTM D256 Test Method A
Thermal Properties			
	Heat deflection temperature (@ 0.45 MPa, 66 psi), Z	173 °C/344 °F	ASTM D648 Test Method A
	Heat deflection temperature (@ 1.82 MPa, 264 psi), Z	121 °C/250 °F	ASTM D648 Test Method A
Recyclability			
	Refresh ratio for stable performance	30%	

1. Based on using recommended packing densities, offers high reusability of surplus powder. Liters refers to the materials container size and not the actual materials volume. Materials are measured in kilograms.
2. Testing according to ASTM D638, ASTM D256, and ASTM D648 using HDT at different loads with a 3D scanner for dimensional stability. Testing monitored using statistical process controls.
3. 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 system requirements for large, vacuum-sealed ovens. In addition, HP Multi Jet Fusion technology uses less heating power than SLS systems for better material properties and material reuse rates, minimizing waste.
4. HP Jet Fusion 3D printing solutions using HP 3D High Reusability PA 12 Glass Beads provide 70% 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 recyclability). Parts are then made from each generation and tested for mechanical properties and accuracy.
5. Compared to selective laser sintering (SLS) technology. Based on running a scan on the 3D printing part to measure and compare with the original STL file (using GOM software). For testing, material is aged in real printing conditions and powder is tracked by generations (worst case for recyclability). Parts are then made from each generation and tested for mechanical properties and accuracy.
6. The following technical information should be considered representative of averages or typical values and should not be used for specification purposes. These values refer to a balanced print mode with FW BD6.1.
7. Test results realized under the ASTM D638 with a test rate of 1mm/min for Z type test and a test rate of 10mm/min for XY type test, specimens type V.
8. Liters refers to the materials container size and not the actual materials volume. Materials are measured in kilograms.
9. The HP powder and agents do not meet the criteria for classification as hazardous according to Regulation (EC) 1272/2008 as amended.
10. Compared to manual print retrieval process used by other powder-based technologies. The term "cleaner" does not refer to any indoor air quality requirements and/or consider related air quality regulations or testing that may be applicable.
11. HP Jet Fusion 3D printing solutions using HP 3D High Reusability PA 12 Glass Beads material provide 70% post-production surplus powder reusability, producing functional parts batch after batch.

