HP 3D High Reusability PP enabled by BASF[17]— Chemical resistant,[18] 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

Chemical resistance,[18] low moisture absorption

- Excellent chemical resistance and low moisture absorption ideal for piping or fluid systems and containers[18]
- Outstanding welding capabilities with other PP parts produced with traditional methods like injection molding
- Versatile material ideal for a wide range of automotive, industrial, and consumer goods 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 reuse[19]
- Provides the optimal balance between performance and cost[20]
- Easy-to-process material enables high productivity and less waste[21]

	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

Providing reassurance

HP 3D Printing materials comply with a number of recognized health and safety standards.

Statements[6]	HP 3D High Reusability PA 11	HP 3D High Reusability PA 12	HP 3D High Reusability PA 12 Glass Beads	HP 3D High Reusability PP enabled by BASF
Biocompatibility	✓	✓	n/a	In testing
REACH	✓	✓	✓	✓
RoHS	✓	✓	✓	✓
PAHs	✓	✓	✓	In testing
Statement of Composition for Toy Applications	✓	✓	n/a	In testing
UL 94 and UL 746A	n/a	✓	✓	In testing

Test results for HP 3D HR PP enabled by BASF

Table 6 shows the values that were obtained for HP 3D HR PP enabled by BASF in the HP Jet Fusion 5200 Series 3D Printing Solution, with PP Balanced print profile and Type I tensile specimens, following the ASTM D638 standard. In this case, heat deflection temperature was characterized in a separate job configured for this purpose using a standard bar specimen according to the ASTM D648 standard. [i] [ii] [iii]

	Average (XY)	Average Z	Test Method
Tensile strength (MPa)[iv] [v]	30	30	ASTM D638
Tensile modulus (MPa) [iv] [v]	1600	1600	ASTM D638
Heat deflection temperature [@ 0.45 MPa, 66 psi] (°C)[vii]	100	100	ASTM D648
Heat deflection temperature [@ 1.82 MPa, 264 psi] (°C)[vii]	60	60	ASTM D648
Elongation at yield (%)[v]	10	10	ASTM D638
Elongation at break (%)[v]	20	18	ASTM D638
Impact strength (kJ/m^2)[vi]	3.5	3.0	ASTM D256
Density (g/cm^3)	0.89		ASTM D792

i. Based on internal testing and measured using the HP Half_Commercial_Datasheet_Job. Results may vary with other jobs and geometries.

ii. Using HP 3D HR PP enabled by BASF material, 20% refresh ratio, Balanced print profile, natural cooling, and measured after bead-blasting with glass beads (70–110 µm) at 5-6 bars.

iii. Following all HP-recommended printer setup and adjustment processes and printheads aligned using semi-automatic procedure.

iv. Tensile strength typical variation (95% of parts) falls within the 28-32 MPa range, while tensile modulus values remain within the 1360 to 1840 MPa range.

v. Tensile test type I specimens measured with a pulling speed of 5 mm/min to comply with ASTM D638 test standards.

vi. Using the Izod test method A with notched @ 3.2 mm specimen according to the ASTM D256 standard.

vii. Using a standard bar specimen measuring 5" x ½" x ¼" in accordance with ASTM D648.

Table 6. Results for HP 3D HR PP enabled by BASF