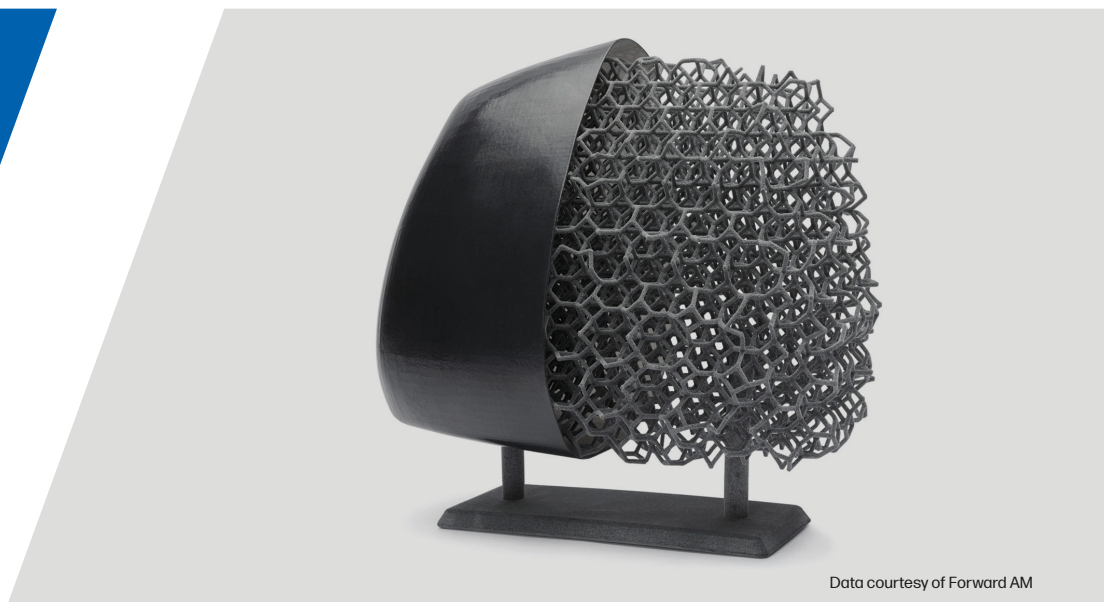




HP 3D High Reusability (HR) TPU 01

with the HP Jet Fusion 5600/5200 Series 3D Printing Solutions



Data courtesy of Forward AM

Produce flexible, durable parts with excellent elasticity and impact resistance, unlocking reliable performance across a wide range of applications—from healthcare, sports gear, or industrial seals to footwear and automotive interiors

Produce durable, flexible, functional parts

- Produce elastomeric parts that combine excellent elasticity rebound and fatigue resistance—ideal for cushioning protection and repeated use
- Maintain structural integrity under stress with outstanding shock absorption and mechanical durability
- Achieve excellent surface finish and fine detail with high process stability—reducing the need for post-processing and enabling clean aesthetics straight from the printer
- Ideal for a wide range of industries requiring elastomeric properties including healthcare sports gear industrial seals footwear and automotive interiors such as seat components

Reduce part cost while maintaining quality

- Reduce cost per part and support sustainable production with up to 80% surplus powder reusability¹—while maintaining consistent performance and excellent thermal stability across multiple cycles
- Minimize material use while maximizing performance with lattice-optimized geometries—enabling lightweight yet strong parts
- Achieve reliable, high-yield printing, and fast cycle times helping reduce lead times and boosting operational efficiency

Simplify processing from print to post-production

- Print with confidence, right from the start—HP AM's optimized PrintMode settings help reduce trial-and-error, providing consistent results and minimizing downtime
- Easily achieve final part aesthetics and functional finishing with available advanced smoothing and dyeing techniques in the market
- Seamless integration within HP AM's ecosystem—from job preparation and printing to material reuse and support—making it easier to scale your elastomeric production





General properties

	Value	Method
Particle size (µm)	70-90	ISO 13320
Bulk density of powder (g/cm ³)	0.50	DIN EN ISO 60

Mechanical properties

This table shows the values obtained for HP 3D HR TPU 01 with the HP Jet Fusion 5200 and 5600 Series 3D Printing Solution with the Balanced print profile.

HP 3D HR TPU 01 ^{i,ii,iii}	Axis	Average value	Method
Hardness Shore A	XY	88-90	DIN ISO 7619-1
	Z	88-90	
Tensile Strength (MPa) ^{iv}	XY	9	DIN 53504, Type S2
	Z	7	
Stress at 50% Strain (%) ^{iv}	XY	6.7	DIN 53504, Type S2
	Z	6.5	
Elongation at Break (%) ^{iv}	XY	291	DIN 53504, Type S2
	Z	137	
Tear Resistance (KN/m)	XY	61	ASTM D624, Die C
	Z	50	
Rebound Resilience (%)	XY	63	ASTM D7121
	Z	63	
Compression set (%)	XY	20	ASTM D395
	Z	20	
Abrasion Loss (mm ³)	XY	90	ASTM D4060
	Z	90	
Density (g/cm ³)	XY	1.11	ASTM D792
	Z	1.11	

- i. Based on internal testing and measured using the two standard jobs: TPU_mechanicalprop_XY and Elastomers_Forest_S1_S2_Tears_6mm. Results may vary with other jobs.
 ii. Using HP 3D HR TPU 01, 20% refresh ratio, Balanced print profile, warm unpack and measured after sandblasting with glass beads 300-400 µm at 5-6 bars.
 iii. Following all HP-recommended printer setup and adjustment processes and printheads aligned using semi-automatic procedure.
 iv. Reporting S2 tensile values.

Dimensional capabilities

The table below shows the dimensional tolerances obtained during the characterization for a target process capability of C_{pk}= 1.33 (4 sigma).

Tolerances for C _{pk} = 1.33 ^{i,ii,iii} (in mm)	Nominal dimension					
	0 - 30 mm		30 - 50 mm		50 - 80 mm	
	XY	Z	XY	Z	XY	Z
With the default setting for HP Jet Fusion 5600/5200 Series 3D Printing Solutions	±0.44	±1.05	±0.52	±1.35	±0.63	±1.80

- i. Based on internal testing and measured using the HP dimensional capability characterization job. Results may vary with other jobs and geometries.
 ii. Using HP 3D HR TPU 01 material, 20% refresh ratio, Balanced print profile, natural cooling, and measured after bead-blasting with glass beads 300-400 µm at 5-6 bars.
 iii. Following all HP-recommended printer setup and adjustment processes and printheads aligned using semi-automatic procedure.



This table shows the dimensional tolerances if the process capability target is set to Cpk = 1.00 (3 sigma).

Tolerances for $C_{pk} = 1.00$ (in mm)	Nominal dimension					
	0 - 30 mm		30 - 50 mm		50 - 80 mm	
	XY	Z	XY	Z	XY	Z
With the default setting for HP Jet Fusion 5600/5200 Series 3D Printing Solutions	±0.35	±0.90	±0.40	±1.15	±0.50	±1.50
i. Based on Internal testing and measured using the HP dimensional capability characterization job. Results may vary with other jobs and geometries. ii. Using HP 3D HR TPU 01 material, 20% refresh ratio, Balanced print profile, natural cooling, and measured after bead-blasting with gloss beads 300-400 µm at 5-6 bars. iii. Following all HP-recommended printer setup and adjustment processes and printheads aligned using semi-automatic procedure.						

Ordering information*

Product number	Material
B83R5A	HP 3D HR TPU 01 300L/140 kg Material
B83R6A	HP 3D HR TPU 01 300L/140 kg P-Material
B83R7A	HP 3D HR TPU 01 1000L/500 kg Material

*Compatible with the HP Jet Fusion 5600 Series 3D Printing Solution and the HP Jet Fusion 5200 Series 3D Printing Solution.

If you need more information please contact your HP AM representative.

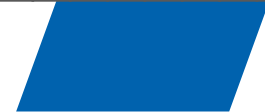
Safety datasheet*

Product number	Link to Safety Datasheet
B83R5A	HP 3D HR TPU 01 300L/140 kg Material
B83R6A	HP 3D HR TPU 01 300L/140 kg P-Material
B83R7A	HP 3D HR TPU 01 1000L/500 kg Material

*The link provided refer to US English version of the Safety Datasheet.

Other country specific Safety Datasheets are available [here](#).

If you need more information please contact your HP AM representative.



HP 3D Printing Material Datasheet



1. HP Jet Fusion 3D Printing Solutions using HP 3D High Reusability TPU 01, 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.

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