

LUBRIZOL AND 3D PRINTING

Lubrizol is a market leader of innovative engineered polymer solutions and is dedicated and committed to expanding its portfolio of thermoplastic polyurethane (TPU) solutions suitable for 3D printing (3DP) technologies.

This in-depth portfolio can be offered either in pellet form for filament extrusion purposes or powder TPU (SLS, HSS or MJF*) to meet strict market requirements for printed parts, such as high strength and high abrasion resistance, high mechanical properties and outstanding surface/haptic properties.

A bio-based** solution is available for FFF.

Filament, powder and pellet TPU solutions for:

- Fused Filament Fabrication (FFF)
- Multi Jet Fusion™ (MJF)*

Active powder TPU developments for:

- Selective Laser Sintering (SLS)
- High Speed Sintering (HSS)

*Proprietary HP® technology

**Bio-based content as certified in accordance with ASTM D-6866.

3DP MARKETS

- Footwear
- Electronics
- Automotive
- Medical
- Aerospace
- Industrial
- Consumer Goods

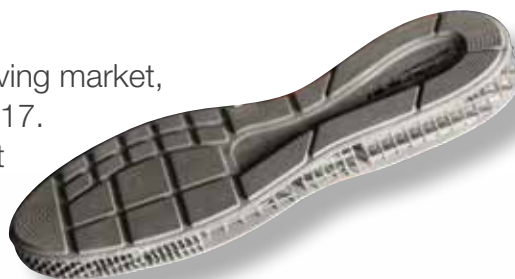


LUBRIZOL ESTANE® 3D TPU SOLUTIONS FOR FUSED FILAMENT FABRICATION APPLICATIONS

Product Name	Shore Hardness	Key Benefits
ESTANE® 3D TPU F70D-065TR UV PL	70D	Low temperature flexibility and UV stability
ESTANE® 3D TPU F50D-021SR GP PL	50D	High stiffness with excellent chemical and oil resistance
ESTANE® 3D TPU F98A-030CR HC PL	98A	Excellent mechanical properties, low warpage and shrinkage
ESTANE® 3D TPU F95A-030 BR ECO PL	95A	Sustainable solution with broad printing window
ESTANE® 3D TPU F94A-055 OR HH PL	94A	Durable with higher temperature performance

HP® PARTNERSHIP

To further support our commitment to this growing and evolving market, Lubrizol became an official HP® Open Platform partner in 2017. This partnership is focused on accelerating the development and adoption of ESTANE® engineered polymers using HP® Multi Jet Fusion™ technology.



LUBRIZOL ESTANE® 3D TPU SOLUTIONS FOR MULTI JET FUSION™ APPLICATIONS

Product Name	Shore Hardness	Key Benefits
ESTANE® 3D TPU M95A-545 OR UV	95A	Excellent flexibility and elasticity on HP® Multi Jet Fusion 4200 Printers

ABOUT LUBRIZOL

The Lubrizol Corporation, a Berkshire Hathaway company, is a market driven global company that combines complex, specialty chemicals to optimize the quality, performance and value of customers' products while reducing their environmental impact. It is a leader at combining market insights with chemistry and application capabilities to deliver valuable solutions to customers in the global transportation, industrial and consumer markets. Lubrizol improves lives by acting as an essential partner in our customers' success, delivering efficiency, reliability or wellness to their end users.



LUBRIZOL
ENGINEERED
POLYMERS

**ADVANCING MATERIALS.
ELEVATING PERFORMANCE.**

