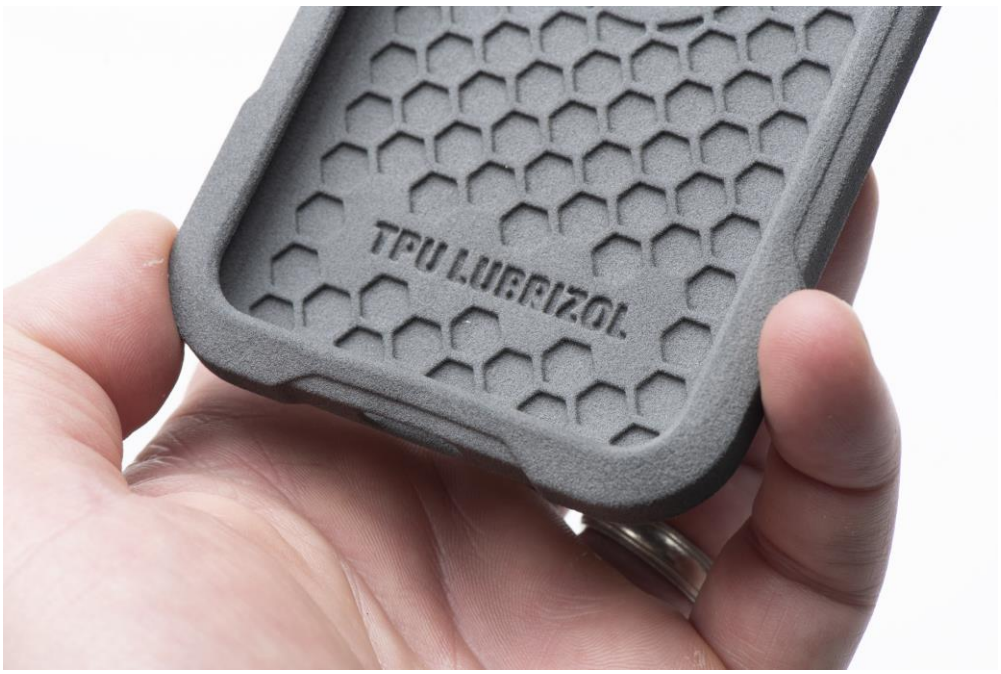
SOLUTION DATA SHEET

ESTANE® 3D TPU M95A Powder for HP's Multi Jet Fusion 4200 Series



Markets	Footwear (upper, midsoles and insoles), prostheses (flexible prosthetic liner), wearables and consumer goods (e.g., bicycle helmets and seats), transportation (e.g. seats, arm rests, radio buttons, exhaust parts), seals, bearings and other industrial applications (e.g., flexible hoses, fixtures, jigs, end of arm tooling)
Polymer	ESTANE® thermoplastic polyurethane (TPU)
Key Benefits	• Excellent processing & unpacking at room temperature (PA12 like) • High material reusability up to 80% • Great rebound, abrasion resistance and energy return

Lubrizol Engineered Materials is a certified HP materials partner and has developed ESTANE® 3D TPU M95A for the HP Jet Fusion 4200 series 3D printing solution. This material is a hard-flexible thermoplastic material with excellent processing and cold unpacking features. The material delivers excellent elongation, impact absorption and tensile strength, and shows good energy rebound, high elasticity, low abrasion rate and good compression set.

Printed parts of ESTANE® 3D TPU M95A TPU powder have excellent mechanical properties and can meet performance requirements for a wide array of functional applications across many industries.

ESTANE® 3D TPU M95A	Test Method	Half Print Bed	Full Print Bed
Tensile Strength (MPa)	ISO-37	18	17
Elongation at Break (%)	ISO-37	430	400
Abrasion Loss (mm^3)	DIN-53516	80	100
Hardness (solid part) Shore A	ASTM D2240	95	95

*Parts were printed with 100% fresh powder and measured in XY orientation

Table 1: Overview of the properties of the commercial grade ESTANE® 3D TPU M95A

Other key benefits of ESTANE 3D TPU M95A:

- Skin sensitization and cytotoxicity tests PASS in accordance with ISO 10993-5 and 10993-10
- High temperature resistance up to 200°C
- Watertight parts can be produced
- Ideal 3D printing material for prototyping and manufacturing scale-up applications.

As a result of ESTANE 3D TPU M95A's excellent handling properties during unpacking, less material goes to waste, less labor is needed, fewer 3D parts are damaged, and more powder is recovered for future use. This benefit helps make ESTANE 3D TPU M95A a more cost-effective solution versus many other elastomeric 3D printing materials, especially when printing complex parts or lattice structures.

Additionally, to enhance our ability as a 3D printing solution provider, Lubrizol has added design for Additive Manufacturing (DfAM) along with engineering and manufacturing capabilities.

A new grade, ESTANE 3D TPU M88A, with a lower hardness is now available for HP's Multi Jet Fusion 5200 series. For more information contact us or visit our web site: www.lubrizol.com/3D-Printing

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.