

EPU46 by Carbon Inc.

40% biobased, elastomeric, black
 Comparable Materials: TPU

EPU46 from Carbon Inc. is a high performance elastomeric polyurethane distinguished by exceptional resilience and tear strength. It delivers a unique balance of durability and flexibility, making it ideal for demanding, production grade applications. Engineered for components subjected to repeated mechanical stress while maintaining precise and reliable performance.

Key Attributes

EPU 46 is widely used in highperformance footwear midsoles, protective padding systems such as helmet liners and impact absorbers, as well as in automotive interior components like vibrationdamping elements. It also enables lattice structures, seals, and flexible functional parts for industrial applications where consistent mechanical response is required. Designed for products that combine comfort, impact mitigation, and longlasting performance in realworld use cases.

- Energy Return & Resilience
- Durability under Cyclic Load
- Design Freedom through Lattices

Properties

Property	Test Method	Value
Tensile Modulus*		15 MPa
Ultimate Tensile Strength*	ASTM D412	26 MPa
Stress at 200% Elongation*	Die C 500 mm/min	19 MPa
Stress at 100% Elongation*	0.8 mm thickness	7 MPa
Elongation at Break*		330%
Shore A Hardness*	ASTM D2240	(80 Instand), 78 (5sec)
Bayshore Resilience*	ASTM D2632	36%
Biocompatibility*	ISO 10993-5 ISO 10993-10 ISO 10993-23	Passed

Tolerances

Expected tolerances are $\pm 0.25\text{mm}$ for the first 25.4mm plus 0.1% of nominal length. Keep in mind that tolerances are not guaranteed on your first build of parts, however, we will work closely with you to help achieve critical dimensions. Please request critical dimensions when you upload your part, and our applications engineers will quickly review and provide feedback.

