TPU 86A Black V1 Powder Technical Data Sheet

Soft and highly elastic powder for parts requiring high resilience and tactile properties.

TPU 86A Black Powder is an ultra-soft thermoplastic elastomer material with lower hardness and excellent elasticity. It combines wear and tear resistance with good resilience, making it suitable for printing complex parts requiring high flexibility. Widely applicable in medical, consumer goods, industrial, and sports protection fields.

Benefits

- High tear strength and elongation at break
- Resistant to saltwater stress cracking, hydrolysis, and UV exposure
- Shore hardness 86A
- Excellent elasticity and rebound performance
- Good impact resistance, shock absorption, and wear resistance
- High reuse rate

Applications

- Medical and wearable devices: Masks, belts, orthoses, prosthetics, and orthopedic insoles
- Consumer goods and footwear: soles, insoles, splints, and flexible decorative components
- Industrial and automotive parts: seals, gaskets, bellows, flexible joints, and piping systems
- Sports protective equipment: cushioning pads, protective gear, helmet liners, and sports footwear
- Customized functional prototypes: elastic lattices, flexible supports, and complex shock-absorbing structures

Mechanical Properties

Property	Testing Method	Typical Values (X-Direction)	Typical Values (Y-Direction)	Typical Values (Z-Direction)
Tensile Strength (MPa)	ISO 527-2	9.89	8.52	6.37
Elongation at Break (%)	ISO 527-2	505.40	412.53	293.34
Shore Hardness A	ISO 868-2003	92	/	93

Other Properties

Property	Testing Method	Typical Values
Powder Color	/	Black
Density (g/cm³)	ISO 1183.1-2004	1.079
Powder Bed Density (g/cm³)	/	0.322
Bulk Density (g/cm³)	ISO 60 / ASTM D1895	0.408

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