



## TPU 90A Black V1 Powder Technical Data Sheet

High elasticity and durability powder for flexible functional parts

TPU 90A powder is a flexible and durable thermoplastic elastomer material with excellent elasticity, wear resistance, and tear resistance. It is suitable for producing flexible components with complex structures and functional prototypes.

### Benefits

- High tear strength and elongation at break
- Resistant to saltwater stress cracking, hydrolysis, and UV exposure
- Shore hardness 90A
- Excellent elasticity and rebound performance
- Good impact resistance, shock absorption, and wear resistance
- High reuse rate

### Applications

- Consumer goods and footwear: soles, insoles, phone cases, and flexible decorative components
- Industrial and automotive parts: seals, snap buckle, 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	11.2	/	/
Elongation at Break (%)	ISO 527-2	248.3	/	/
Shore Hardness A	ISO 868-2003	90	/	/

### Other Properties

Property	Testing Method	Typical Values
Powder Color	/	Black
Density (g/cm <sup>3</sup> )	ISO 1183.1-2004	1.055
Powder Bed Density (g/cm <sup>3</sup> )	/	0.332
Bulk Density (g/cm <sup>3</sup> )	ISO 60/ ASTM D1895/ GB-T 5162	0.464

### Disclaimer

The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End-use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc. Product specifications are subject to change without notice. Each user is responsible for determining the safety, lawfulness, technical suitability, and disposal/recycling practices of Raise3D materials for the intended application. Raise3D makes no warranty of any kind, unless announced separately, to the fitness for any particular use or application. Raise3D shall not be made liable for any damage, injury or loss induced from the use of Raise3D materials in any particular application.