TPU Gray Datasheet

Overview

TPU Gray is compatible with AIHFabs's MJF 3D printing technology, which utilizes TPU powder along with fusing and detailing agents to produce flexible, durable components with high precision and a smooth surface finish.

As-printed Part's Tolerance: ±300μm or 0.3%

Maximum Printing Size: 380*380*284mm

Properties

Thermal Properties	Metric	Method
Flammability	UL94	HB 2.9 mm/min
Melting Point	135℃	ISO 11357 (20 K/min)
Glass Transition Temperature	-48℃	ISO 11357 (20 K/min)
Dense Properties	**Metric**	**Method**
Density	1.1 g/cm³	DIN EN ISO 1183-1
Mechanical Properties	**Metric**	**Method**
Tensile Strength	8MPa	DIN 53504, S2
Tensile Modulus	85MPa	ISO 527-2, 1A
Elongation at Break	> 215%	DIN 53504, S2
Shore Hardness	88-90	DIN ISO 7619-1
Tear Strength (Propagation, Trouser)	20 kN/m	DIN ISO 34-1, A
Tear Strength (Initiation, Graves)	35 kN/m	DIN ISO 34-1, B
Compression Set (23℃, 72h)	23%	DIN ISO 815-1
Rebound Resilience	63%	DIN 53512
Abrasion Resistance (Method A)	98 mm³	DIN ISO 4649
Flexural Properties	**Metric**	**Method**
Flexural Modulus	75MPa	DIN EN ISO 178
Impact Properties	**Metric**	**Method**
Notched Impact Strength	no break	DIN EN ISO 179-1
Unnotched Impact Strength	45 kJ/m²	DIN EN ISO 179-1
Other Properties	**Metric**	**Method**
Rubber Deterioration (Ross Flex, 100k Cycles, 23℃)	no cut growth	ASTM D1052 (Method A)
Rubber Deterioration (Ross Flex, 100k Cycles, -10℃)	no cut growth	ASTM D1052 (Method A)

Pros

MJF-printed TPU Gray parts are known for their excellent flexibility, impact resistance, and good elongation, making them ideal for applications that require robust, resilient components like soft grip systems, flexible tubing, protective gear, and non-marring tools.

Cons

Products printed with TPU may have a grainy surface, additional dyeing may be needed to achieve specific colors.

Applications

Custom Orthopedic Models Shoe Soles and Hoses Prototypes Brackets

Protective Gear Custom-fit Wearables Living Hinges

Medical Tubing and Seals Bike Seats Custom Gasket and Bearings