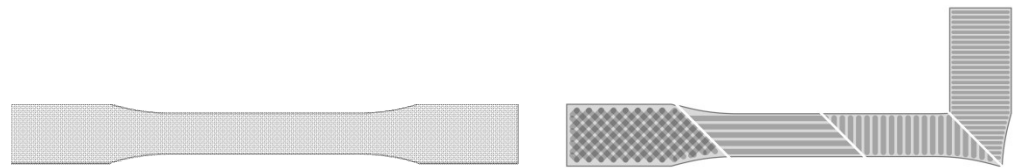


Essentium TPU Flame Retardant

Description:

We engineered our Essentium Flex line to have the perfect balance of elasticity and toughness. This filament exhibits excellent interlayer adhesion and high stain at break. Our TPU 90A FR filament is perfect for a print that needs flexibility, grip, and abrasion resistance. Use this material to make flexible hinges, belts, plugs, gaskets, protective cases, overgrips, wheels, shoe soles, vibration dampeners, energy-absorbing lattices, and so much more! With this filament, we've got your flexible printing needs covered.

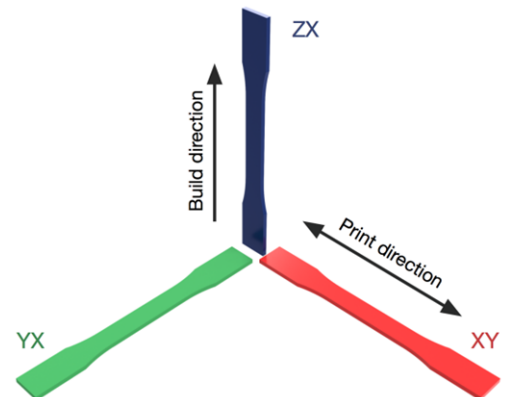


Metric	Method	Molded Properties ¹	Method	3D Printed Properties ²			
				45-45	XY	YX	ZX
Tensile Strength, MPa	DIN 53504-S2	25	ASTM D412	12	12	10	7
Strain at Break, %	DIN 53584-S2	550	ASTM D412	535	507	389	103

Metric	Method	Properties ¹
Shore Hardness, A	ISO 7619	90
Specific Gravity	ISO 1183/A	1.25

Flame Properties ¹	
UL 94	V-0
UL 1581 FT-1 & UL 1060	pass
UL 1581 VW-1 & UL 1061	pass
Vertical Flame Test	pass
LOI	24%
Halogen Content	Halogen Free

Recommended Print Settings:	
Extrusion Temperature, °C	205-250
Bed Temperature, °C	23-60
Enclosure Temperature, °C	Room Temperature
Print Speed, mm/s	15-30



Notes:

- (1) Values taken from raw material TDS
- (2) Print settings: nozzle temp: 240 °C, bed temp: 60 °C, infill: 100%, speed: 30mm/s, layer height: 0.3mm, extrusion multiplier: 1.05, nozzle diameter: 1.0mm

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Essentium Materials, LLC
5880 Imperial Loop Dr.
Suite 10
College Station, TX 77845
essentiummaterials.com
979.777.2354