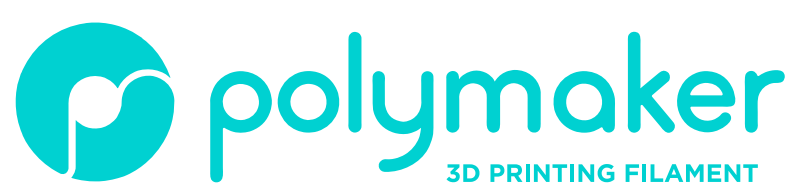


TECHNICAL DATA SHEET



V5.6



PolyFlex™ TPU90

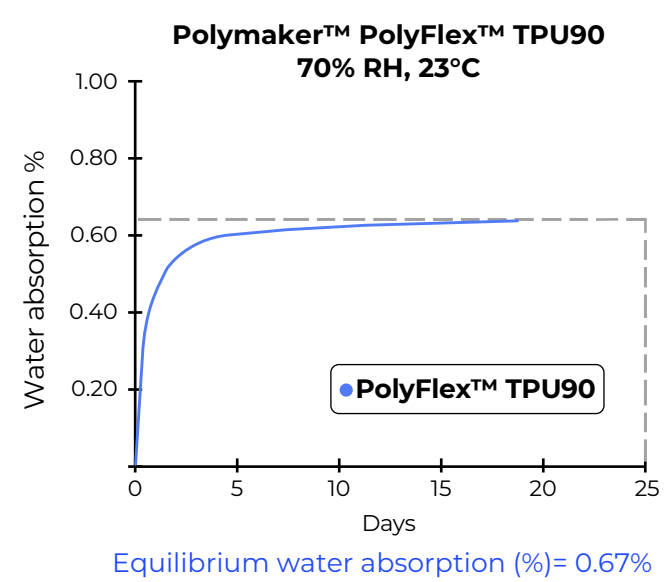
PolyFlex™ TPU90, created from Covestro's Addigy® family, is a thermoplastic polyurethane (TPU) based filament designed to provide great flexibility without compromising on printing speed. It also has the ability to resist ultra-violet (UV) light or sunlight.

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PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO1183, GB/T1033	1.21 g/cm ³ at 23°C
Melt index	185°C, 1.2 kg	6.1 g/10min

MOISTURE ABSORPTION CURVE



MECHANICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Stress at 100% strain (X-Y)	ISO 37, GB/T 528	7.1 ± 0.3 MPa
Stress at 200% strain (X-Y)	ISO 37, GB/T 528	9.0 ± 0.9 MPa
Stress at 300% strain (X-Y)	ISO 37, GB/T 528	13.2 ± 0.6 MPa
Stress at 400% strain (X-Y)	ISO 37, GB/T 528	19.0 ± 0.9 MPa
Tensile strain (X-Y)	ISO 37, GB/T 528	30.1 ± 2.4 MPa
Elongation at break (X-Y)	ISO 37, GB/T 528	592.1 ± 32.9 MPa
Shore hardness	ISO 7619-1, GB/T 531.1	90A

CHEMICAL RESISTANCE DATA

PROPERTY	TYPICAL VALUE
Effect of weak acids	Fair
Effect of strong acids	Poor
Effect of weak alkalis	Fair
Effect of strong alkalis	Poor
Effect of oils and grease	Good

Good:
Material may get minor attack after long periods of storage with chemical at ambient temperature

Fair:
Material can be used for short time contact with chemicals at ambient temperature

Poor:
Material becomes unstable on contact with chemical at ambient temperature

RECOMMENDED PRINTING CONDITIONS

Nozzle temperature	210-230°C
Build plate temperature	25-60°C
Build surface treatment	PC and Textured PEI
Cooling fan	ON
Closure chamber	Not needed

Printing Speed	30-70mm/s
Drying temp. and time	70°C/8H
Retraction distance	3-6 (mm)
Retraction Speed	40-60 (mm/s)

*Based on 0.4mm nozzle. Printing conditions may vary with different nozzle diameters.



PolyDissolve™ S1
Recommended support material



PolyBox™ or PolyDryer™ Box
Recommended storage for excellent printing quality

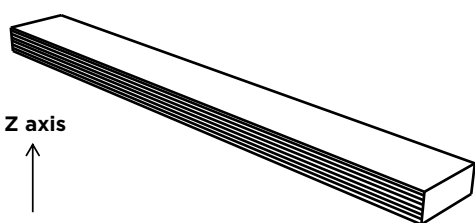
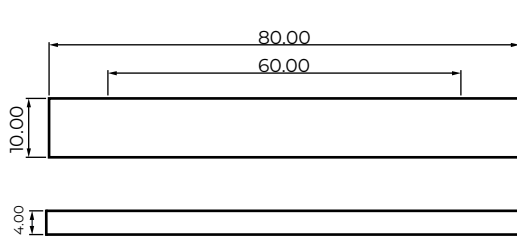
HOW TO MAKE SPECIMENS

Printing temperature	230°C
Bed temperature	50°C
Top & bottom layer	3
Environmental Temperature	Ambient

Infill	100%
Shell	2
Cooling fan	ON

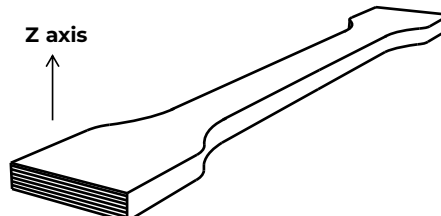
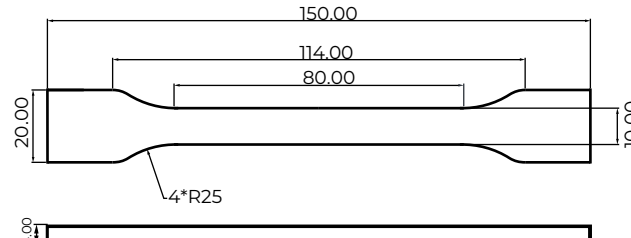
FLEXURAL TESTING SPECIMEN

ISO 178, GB/T 9341



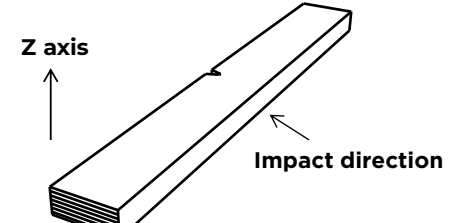
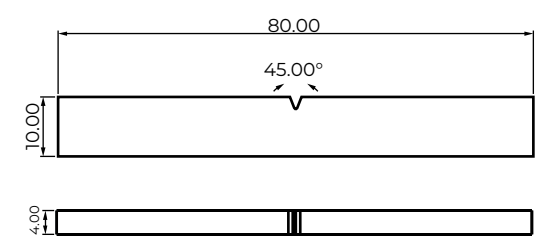
TENSILE TESTING SPECIMEN

ISO 527, GB/T 1040



IMPACT TESTING SPECIMEN

ISO 179, GB/T 1043



*Based on testing with Polymaker™ PC-ABS Black (SKU: PD02001)

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 Polymaker™ materials for the intended application. Polymaker™ makes no warranty of any kind, unless announced separately, to the fitness for any use or application. Polymaker™ shall not be made liable for any damage, injury or loss induced from the use of Polymaker™ materials in any application.