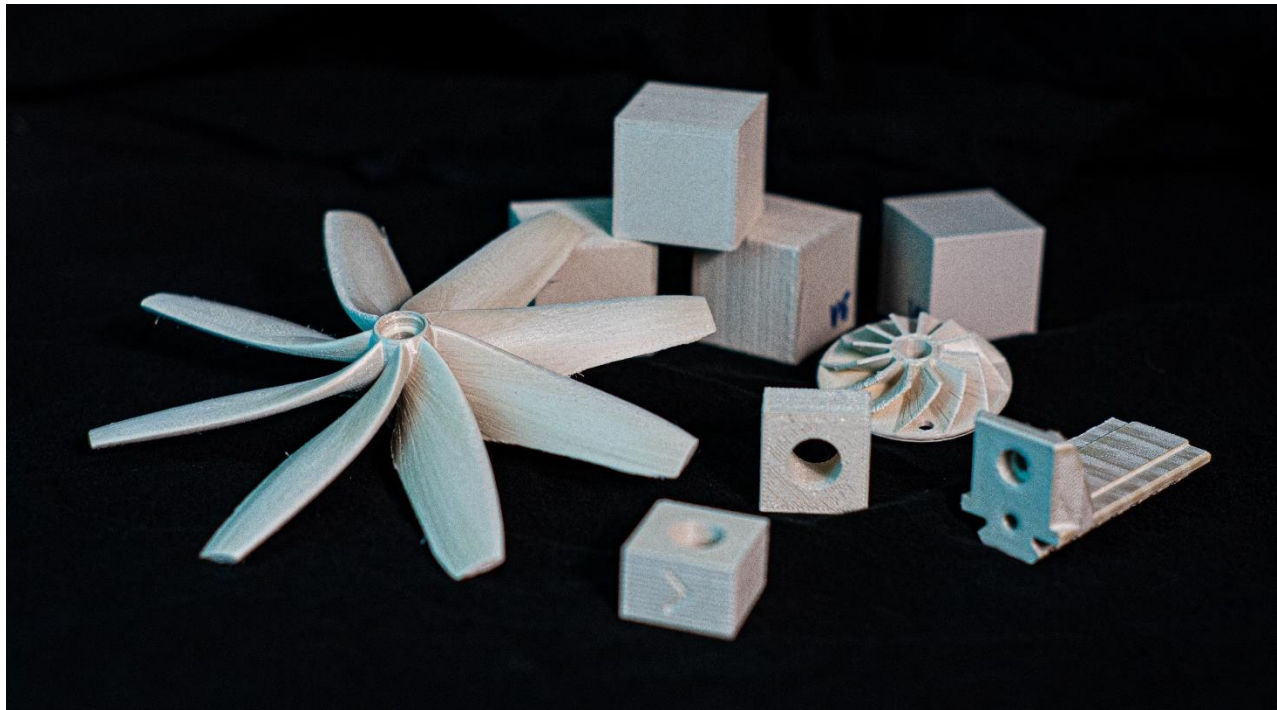

Technical Data Sheet: Tullomer™ 3D Printing Filament

Product Description

Tullomer™ from Z-Polymers is an advanced engineering plastic for additive manufacturing applications. It has excellent chemical, thermal, and mechanical properties making it an exciting addition to the next generation of superpolymers.



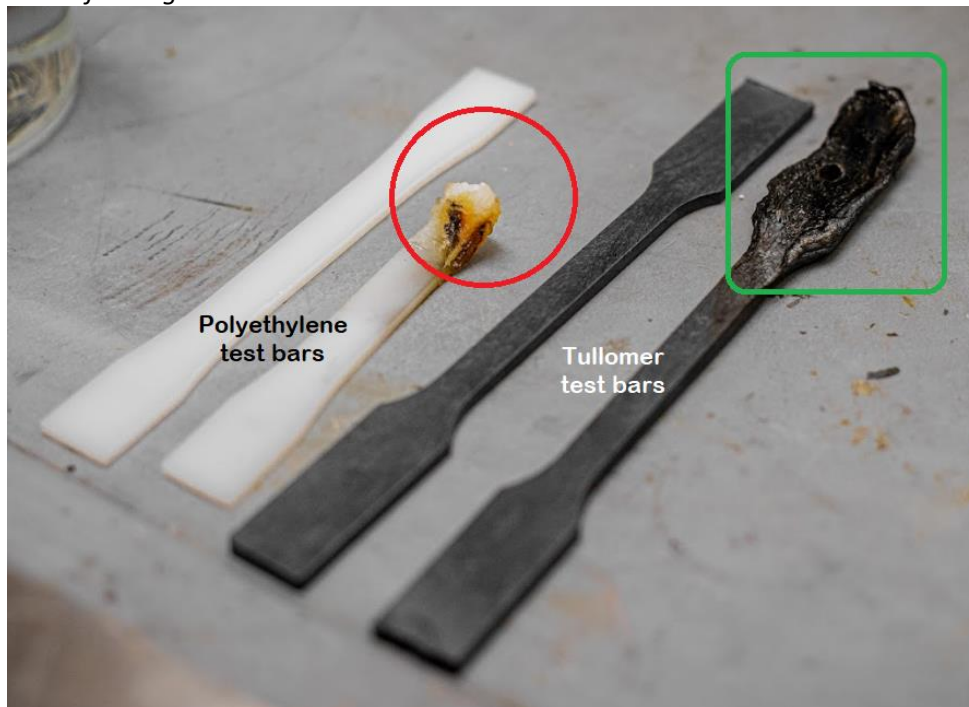
Mechanical Properties	Value	Units	Test Method
Tensile Strength	420	MPa	ASTM-D3039
Tensile Modulus	12	GPa	ASTM-D3039
Tensile Elongation	6	%	ASTM-D3039

Tensile coupons measuring 50mm (L) x 5mm (W) x 1mm (H) were tested using an Instron 4466 equipped with a 5kN loadcell.

Thermal Properties	Value	Units	Test Method
Melting Point	280	°C	DSC
Glass Transition (Tg)	n/a*	°C	DSC

*Tullomer does not undergo a glass transition but may soften above 180°C.

Figure below shows the extreme deformation and melting of polyethylene compared to the Tullomer™ material which self-extinguishes.



Chemical Resistance

Tullomer filaments have exceptional chemical resistance compared to other plastics used for FDM; this makes this material ideal for various applications that require high product durability. Its good chemical resistance towards organic solvents and cleaning agents makes this material desirable in the electronics industry. Tullomer is resistant against acids and bases.

Resistance to acids (i.e. Nitric acid, phosphoric acid, acetic acid, chromic acid, monochloroacetic acid, formic acid, hydrochloric acid, sulfuric acid)	Excellent
Resistance to alkali (sodium hydroxide, calcium hydroxide, sodium hypochlorite)	Excellent
Resistance to most chemicals (Acetone, toluene, dimethyl formamide, methanol, ethanol, ethyl acetate, ethylene glycol, Brake fluids- Castrol TLX 988C, Fuels- gasoline, methylene chloride, nitrobenzene, engine oil, silicone oil, hydraulic oil, refrigerant)	Excellent
Resistance to water (i.e. Chlorine water)	Excellent

Additional Benefits

- ☆ Four times stronger than current leading superpolymers used in FDM
- ☆ High thermal stability
- ☆ Flame retardant
- ☆ Dimensional stability
- ☆ Best polymer for chemical resistance
- ☆ No need for annealing after printing
- ☆ Lowest moisture absorption (.04%)
- ☆ High dielectric strength
- ☆ Very low dielectric loss constants
- ☆ Lowest oxygen and water vapor transmission of any polymer
- ☆ Less nozzle abrasion than carbon filament reinforced filaments during printing

Interested in learning more?

Go to [Z-Polymers.com](https://www.z-polymers.com) and reach out to us with a short description on your application and needs.

Disclaimer:

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