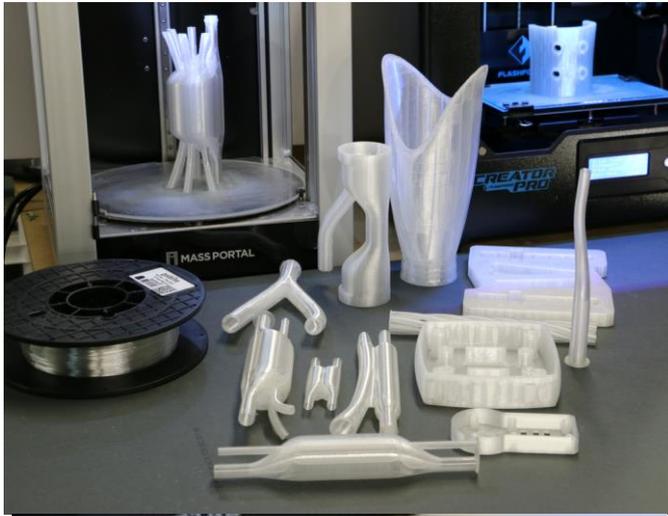


## **guideline Features:**

guideline is a unique high strength PETG based material with excellent high temperature printing capabilities. Users know that printing small features of some parts can be difficult due to thermal build-up. guideline is much less susceptible to these thermal issues allowing for finer detail without distortion. guideline is also released as a starting point for individuals and companies wishing to obtain eventual FDA/CE certification for a medical grade device knowing that the raw material itself is listed with the FDA and has already passed specific FDA testing. guideline is sold as a raw material modified in form only into 3d printing line and most important, extruded in a manner that keeps contaminants out of the material during the cooling process, where contaminants and bacteria could be embedded in the soft extrusion. In addition, pH and ORP levels are monitored and adjusted to maintain acceptable levels.

	<a href="http://www.taulman3d.com">www.taulman3d.com</a>	
	<b>Specification</b>	<b>guideline</b>
<i>Notes:</i>	<b>Technical</b>	
1	Manufacture Part ID	tgu1/tgu3
	HS Code	3916.9
	<b>Thermal</b>	
2	Printing Temperature	244C-252C
	Melting Temperature	220
3	Tg Glass transition	77C
4	Pyrolysis - Thermal degradation	294C
	Non-Destructive Evaluation	Yes
5	Print-Bed Temp	68C Max
6	Ambient Temp (Enclosure)	None
	<b>Physical</b>	
	Nominal Diameter (3mm Maximum Dia)	1.75mm/2.85mm
	Weight /spool	1 lb
	Nominal Length/spool (In Feet)	490/180
7	Shrinkage - in/in	0.0021
8	Solvent/Glue	Tetrahydrofuran
	<b>9 Mechanical</b>	
	Tensile Stress "PSI" when 3D Printed	6,850
	Ultimate Elongation when 3D Printed	5.90%
	Modulus "PSI" when 3D Printed	281469
	<b>Optical</b>	
	Opacity	91%
	Reflectivity	TBD
10	Color	Natural
	<b>Approvals</b>	
	FDA - Direct Food Contact	Yes+
	FDA Direct Drink Contact	Yes+
	<b>UL Flammability</b>	
	UL 94 HB	None
	UL 94 V2 at 1.5 mm thickness	None
	<b>Features:</b>	
	Surface texture	N/A
11	Living Hinge	Good
	Use of Taps for threads	Very good
	CNC finish tooling	Carbide
12	CNC Coolant	Forced Air Only
	Use in 3D Forging	good
	Printed Prosthesis	Very good
	Robotic Assemblies	Very good
	Jewelry Printing	Very good
	Fumes	None
	Lenticulated overlays.	N/A
	Dye type	N/A
	Dye Uptake (Saturation)	N/A
	Specifications are subject to change.	

# guidel!ne



**REPORT OF MECHANICAL TEST**

**SAMPLE:** 5ea. guidellne  
**SUBJECT:** Tensile Test  
**METHOD:** ASTM D412-15a, Pulled at a rate of .2 in/min  
**INSTRUMENT:** 5500R Instron (Cal Due: 3/17) with Bluehill 3 Software  
**RESULTS:**

Sample	Thickness (in)	Width (in)	Area (in^2)	Load (lbf)	Tensile Strength (psi)	Ultimate Elongation (%)	Modulus (psi)
1	0.170	0.499	0.085	577	6810	4.0	284553.1
2	0.170	0.504	0.086	576	6730	4.0	273395.3
3	0.169	0.485	0.082	558	6810	4.5	294842.5
4	0.172	0.503	0.087	623	7200	12.5	271553.9
5	0.170	0.494	0.084	563	6700	4.5	283004.0
<b>Average</b>				580	6850	5.9	281469.8

Information provided to the user will be in sync with the FDA’s **“Technical Considerations for Additive Manufactured Devices Draft Guidance for Industry and Food and Drug Administration Staff”**. **Section “C” “Material Controls”**. While COA’s will be the responsibility of the end user, taulman3D will provide information to support such efforts.

guidellne meets the following:

ISO 11607-1: 2006

ISO 10993

USP Class VI

USP <661>

DMF (Drug Master File) number 16525

3D Printing:

Print temperature = 245C to 252C

When 3D Printed, guidellne has a tensile strength of 6,850PSI.

Elongation is 5.9 and a modulus of 281,469PSI.

Heat distortion temp is 70C.

Softening temperature is 100C

guidellne is a clear PETG based polymer that prints at 250C. guidellne is very easy to print needing only a small amount of retraction. A key feature of guidellne is that one can easily print small hollow tubes without the issue of heat build-up deforming the tube.

guidellne’s use as a Support Material:

Another feature of guidellne is that it’s higher print temperature allow it to be used as a support material for medical grade Nylon. guidellne used as a zero-

gap support material works extremely well on Nylon with just enough adhesion to form mechanical support yet easy to remove from parts where mechanical removal is accessible.

To register your spool/s of guideline, send an email to the address below and include your serial # in the subject line.

In the body, include any info you wish to provide as to your use of guideline.