

TABLE 2 Tolerances for Machined Parts of PTFE Resins

Machining Operation	Tolerance	
Turning/boring:		
All dimensions (OD, ID, and lengths) up to 25.4 mm (1 in.)	±38 μm	±0.0015 in.
For each additional inch of dimension (OD, ID and length) add a further tolerance of	±25 μm	±0.001 in.
ID tolerance based on a length to diameter ratio no greater than	...	1.5 to 1.0
Concentricity—Total indicator reading (TIR) for relation of OD to ID angles	±150 μm	0.006 in.
	±8.7 rad	±½°
Drilling/reaming:		
Reaming of PTFE parts is not generally recommended due to build-up of frictional heat in tool.		
Diameter of drilled hole tolerance based on a length to a diameter ratio not to exceed 5.0 to 1.0.		
Location and depth of drilled hole	±38 μm	±0.015 in.
Milling:		
All dimensions	±0.005 mm/mm	±0.005 in./in.
Angles	±8.7 rad	±½°
Sawing:		
All dimensions	±1.524 mm	±0.060 in.
Grinding:		
Face or flat grinding is usually not performed on PTFE parts, but where this process is required tolerances are to be agreed upon between the purchaser and the seller.	-0.000 mm	-0.000 in.
Centerless grinding:		
Dimensions up to ¼ in.	±12.7 μm	±0.0005 in.
Dimensions from ½ in. to 1 in.	±25.4 μm	±0.001 in.
For each additional inch or part of inch add a further tolerance of	±12.7 μm	±0.0005 in.
Finish:		
When specifying surface finish on machined PTFE parts, the method of measurement must also be specified. Even when surface measurement instruments are properly used, root mean square (rms), surface finish reading will range ±50 % and tolerances should be specified.		
When performance is a function of finish, inspection techniques should be agreed upon between the purchaser and the seller. It should be pointed out that, since a polymer that undergoes plastic flow and material transfer is being considered, the surface finish, itself, is not as critical as it is for metals.		



TABLE 1 Tolerances for Molded Parts of PTFE Resins

Molded Part	Tolerances	
Rings:		
Diameter	0.010 mm/mm	0.010 in./in.
Wall	0.10 mm	0.004 in.
Height (maximum)	0.100 mm/mm (min 0.38 mm)	0.100 in./in. (min 0.015 in.)
Concentricity (OD to ID)	0.008	0.008
Parallelism wall—greater than 2.54 mm (0.100 in.)	0.010 mm/mm diameter	0.010 in./in. diameter
Solid Round:		
Diameter	0.010 mm/mm	0.010 in./in.
Height	0.100 mm/mm min 0.38 mm, min 0.254 mm	0.100 in./in. min 0.015 in., min 0.010 in.
Parallelism	0.20 mm/mm of diameter	0.008 in./in. of diameter
Solid other than round:		
Lengths	0.01 mm/mm	0.010 in./in.
Height (mold direction)	0.100 mm/mm min 0.38 mm, min 0.254 mm	0.100 in./in. min 0.015 in., min 0.010 in.
Parallelism	0.20 mm/mm of length	0.008 in./in. of length
General:		
Corners	0.25 mm min radius	0.010 in. min radius
Finish	3.25 μm min	128 μ in. min
Steps:		
Draft angle	4° max	4° max
Radius or fillet, or both	0.25 mm min radius	0.010 in. min radius