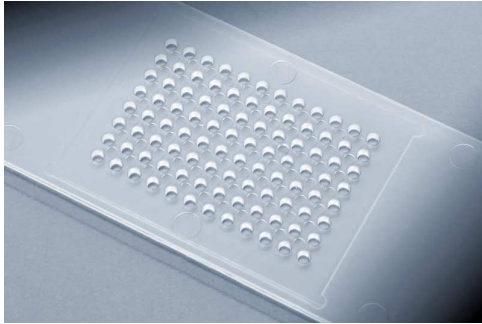


TOPAS® Injection Molding Grades (excludes Elastomer)



CNC milling machines can be used with TOPAS. TOPAS will machine similar to acrylic. Tools can be low carbon or micrograin carbide tools. They should be in good working condition with a honed edge and sharp tip. If the deviation of the chosen tool is high, you may need to change to a different one.

For the smoothest finish along the walls, a high speed has been shown to work best. Rotational speeds starting at 30,000-40,000 rpm should be considered along with a feed rate of 25-75 mm/min. Some roughness is expected and may not be eliminated through milling.

When drilling holes use a lower speed to prevent chips from overheating the material. This is especially true for the lower Tg grades including 8007S-04.

The tool angle is not significant when working with TOPAS.

Oil free, water based lubricants should be used to avoid chemical stress cracking. A 90:10 mixture of water to IPA is a good cutting fluid. Although a cutting fluid is preferred, TOPAS can be machined without one.

Burring can occur on one or both sides of the path. This is more common in the low Tg grades. In such cases, these can typically be removed by repeating the path with a slight offset and in the reverse direction.

For cutting, tile saws/cutters are most effective. A coarse blade has shown to be better than fine.

In general, forces applied to TOPAS should be kept low to avoid chipping or crack propagation.

In some cases, TOPAS parts may exhibit excessive breakage during machining due to material stress. To alleviate stress in parts it is recommended to anneal them.

Recommendations for annealing are:

TOPAS Product	Ramp up over 3 hrs (longer for large parts)	Hold for 5-10 hrs	Ramp down over 3 hrs (longer for large parts)
8007	Room temp to 60-70°C	60-70°C	60-70°C to room temp
5013 / 6013	Room temp to 120-130°C	120-130°C	120-130°C to room temp
6015	Room temp to 140-150°C	140-150°C	140-150°C to room temp
6017	Room temp to 160-170°C	160-170°C	160-170°C to room temp

Notice to Users: This publication contains general advice for machining our products. It is not intended to cover individual cases. The properties of our products may change as a result of processing conditions or the inclusion of additives. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and to entrust the handling of such material to adequately trained personnel only. Please refer to the appropriate Safety Data Sheets before attempting to machine our products.