

## Edgetek™ AT Acetal (POM) Compounds

Problem	Cause	Solution
<b>Weld Lines</b>	Melt front temp are too low	<ol style="list-style-type: none"> <li>1. Increase pack and hold pressure</li> <li>2. Increase melt temperature</li> <li>3. Increase vent width and locations</li> <li>4. Increase injection rate</li> <li>5. Increase mold temperature</li> </ol>
	Mold design	<ol style="list-style-type: none"> <li>1. Reduce injection rate</li> <li>2. Increase gate size</li> <li>3. Perform short shots to determine fill pattern and verify proper vent location</li> <li>4. Add vents and/or false ejector pin</li> <li>5. Move gate location</li> </ol>
<b>Flash</b>	Injection pressure too high	<ol style="list-style-type: none"> <li>1. Decrease injection pressure</li> <li>2. Increase clamp pressure</li> <li>3. Decrease injection rate</li> <li>4. Increase transfer position</li> </ol>
	Excess material volume	<ol style="list-style-type: none"> <li>1. Decrease pack pressure</li> <li>2. Reduce shot size</li> <li>3. Decrease injection rate</li> </ol>
	Melt and/or mold too hot	<ol style="list-style-type: none"> <li>1. Decrease nozzle and barrel temperatures</li> <li>2. Decrease mold temperature</li> <li>3. Decrease screw speed</li> </ol>
<b>Sink Marks</b>	Part geometry too thick	<ol style="list-style-type: none"> <li>1. Reduce wall thickness</li> <li>2. Reduce rib thickness</li> </ol>
	Melt too hot	<ol style="list-style-type: none"> <li>1. Decrease nozzle and barrel temperatures</li> <li>2. Decrease mold temperature</li> </ol>
	Insufficient material volume	<ol style="list-style-type: none"> <li>1. Increase shot size</li> <li>2. Increase injection rate</li> <li>3. Increase packing pressure</li> <li>4. Increase gate size</li> </ol>
<b>Burning</b>	Melt and/or mold too hot	<ol style="list-style-type: none"> <li>1. Decrease nozzle and barrel temperatures</li> <li>2. Decrease mold temperature</li> <li>3. Reduce injection rate</li> <li>4. Consult PolyOne for specific grade of Edgetek AT compounds</li> </ol>
	Mold design	<ol style="list-style-type: none"> <li>1. Clean, widen and increase number of vents</li> <li>2. Increase gate diameter or number of gates.</li> </ol>
<b>Incomplete Fill</b>	Melt and/or mold too hot	<ol style="list-style-type: none"> <li>1. Increase nozzle and barrel temperatures</li> <li>2. Increase mold temperature</li> <li>3. Increase pack and hold pressure</li> <li>4. Increase injection rate</li> <li>5. Check thermocouples and heater bands</li> </ol>
	Mold design	<ol style="list-style-type: none"> <li>1. Enlarge or widen vents and increase number of vents</li> <li>2. Check that vents are unplugged</li> <li>3. Check that gates are unplugged</li> <li>4. Enlarge gates and/or runners</li> <li>5. Perform short shots to determine fill pattern and verify proper vent location</li> <li>6. Increase wall thickness to move gas trap to parting line</li> </ol>
	Shot size	<ol style="list-style-type: none"> <li>1. Increase shot size</li> <li>2. Increase cushion</li> </ol>
<b>Brittleness</b>	Low melt temperature	<ol style="list-style-type: none"> <li>1. Increase melt temperature</li> <li>2. Increase injection rate</li> <li>3. Measure melt temperature with pyrometer</li> </ol>
	Degraded/Overheated material	<ol style="list-style-type: none"> <li>1. Decrease back pressure</li> <li>2. Decrease melt temperature</li> <li>3. Use smaller barrel/excessive residence time</li> </ol>
	Gate location and/or size	<ol style="list-style-type: none"> <li>1. Relocate gate to nonstress area</li> <li>2. Increase gate size to allow higher flow rate</li> </ol>
<b>Sticking in Mold</b>	Cavities are overpacked	<ol style="list-style-type: none"> <li>1. Reduce injection rate</li> <li>2. Reduce pack and hold pressure</li> <li>3. Reduce nozzle and barrel temperatures</li> <li>4. Reduce mold temperature</li> <li>5. Increase cooling time</li> </ol>

Problem	Cause	Solution
<b>Sticking in Mold</b>	Mold design	1. Increase draft angle
	Part is too hot	1. Decrease nozzle and barrel temperatures 2. Decrease mold temperature 3. Increase cooling time
<b>Warp</b>	Excessive orientation	1. Increase cooling time 2. Increase melt temperature 3. Reduce injection pressure and injection rate
	Mold design	1. Increase number of gates
<b>Uneven Surface Appearance</b>	Melt temperature too low	1. Increase melt temperature 2. Increase mold temperature 3. Increase injection speed
	Insufficient packing	1. Increase pack and hold pressure and time 2. Increase shot size
<b>Excessive Shrink</b>	Too much orientation	1. Increase packing time and pressure 2. Increase hold pressure 3. Reduce melt temperature 4. Reduce mold temperature 5. Reduce injection speed 6. Reduce screw rpm 7. Increase venting 8. Increase cooling time
		Too little orientation
<b>Color Streaks</b>	Incomplete color dispersion	1. Increase back pressure 2. Verify color concentrate compatibility 3. Reduce rear zone temperature 4. Increase injection rate

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