sarlink®

Processing Advantages with Sarlink TPVs

Are long cycle times affecting your bottom line?
Using Sarlink® materials in your injection molding process can save you time and money by reducing cycle times 10 - 25%!

1. Due to a more efficient nucleating agent, Sarlink TPVs crystallize at a temperature higher than that of competitive TPVs. This means that Sarlink parts "take a set" at a higher temperature and can therefore be ejected from the mold sooner (and hotter) without being damaged by the ejector system.

2. In addition, Sarlink TPVs tend to have lower viscosity (better flow properties) than comparable competitive TPVs grades therefore melt temperature doesn't need to be as high in order to fill the same mold cavity. Lower melt temperatures result in shorter cooling times, allowing parts to be ejected sooner.

Typically, a 10% to 15% cycle time reduction will be observed. Often times, however, 20% or 25% cycle time reductions will occur when total process is optimized using Sarlink.

The following adjustments can be made to the injection molding process to shorten the cycle time when switching from competitive TPVs to Sarlink:

Parameter	Action (Typical range values)
1. Barrel Zone Temperature	Decrease: 0°F to 20°F
2. Hot Runner Manifold Temperature	Decrease: 0°F to 20°F
3. Screw Backpressure	Decrease: 0 psi to 75 psi
4. Mold Temperature	Decrease: 0°F to 20°F
5. Injection Hold	Decrease: 0% to 25%
6. Screw RPM	Increase: 0% to 50%
7. Cooling Time	Decrease: 10% to 25%

1. Barrel temperature profile can typically be reduced by about 20°F across the board. Reducing the barrel temperature too much, however, may induce too much shear heating and melt temperature may actually increase.
2. Temperature in hot runner manifold systems can also be lowered to similar levels.
3. Screw back pressure should be lowered to reduce shear heating of the material and possibly avoid unnecessary heat. Sarlink melt point is affected more by shear than by actual barrel zone heat input.
4. Mold temperature can also be reduced since Sarlink tends to have better flow properties.
5. Injection hold periods can be reduced due to faster gate freeze off.
6. Screw RPM can often be increased. This will allow for a faster shot build up.
7. Cooling time can be reduced since "part set up" occurs at a higher temperature. This allows finished parts to be ejected sooner and at higher temperatures.

Part size, thickness and geometry will determine the degree of adjustment that can be made. In some situations most of these adjustments can be used, in others only a couple. The main idea is to start with the least amount of heat possible and bring melt temperature up only as necessary.

The shrinkage factor:
Competitive TPVs typically have higher shrinkage than Sarlink TPVs. Ejecting a Sarlink part hotter and sooner will impart more shrinkage bringing the Sarlink shrink factor in line with that of competitive TPVs (and at the same time reducing cycle time).

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