

# Stanyl® TC170

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This quick start instruction gives an indication of the key settings for processing Stanyl® TC170 to ensure best crystallization and prevent material degradation as a result of hydrolysis or thermal load. It is a summary of the Injection Molding Recommendations which can be found in our Plastics Finder at <https://plasticsfinder.com>. Our online guidelines are recommendations to help with material processing and/or to evaluate and resolve potential processing issues.

## MATERIAL HANDLING

### Drying

Stanyl® grades are hygroscopic and absorb moisture from the air relatively quickly. Moisture absorption is fully reversible under the following drying conditions without compromising material quality. Preferred driers are de-humidified driers with dew points maintained between  $-30$  and  $-40^{\circ}\text{C}$  /  $-22$  and  $-40^{\circ}\text{F}$ . Vacuum driers with  $\text{N}_2$  purge can also be used. Hot air ovens or hopper driers are not suitable for pre-drying Stanyl® grades; the use of such driers may result in non-optimum performance.

Moisture content	Time	Temperature	
[%]	[h]	[°C]	[°F]
0.1 – 0.2 and as delivered	2	80	176
0.2 – 0.5	4 – 8	80	176
>0.5	<100 or 24	80 105	176 221

## TEMPERATURE SETTINGS

### Barrel temperature

Optimal settings are governed by barrel size and residence time. Due to the high melting point of Stanyl® this temperature should be set high enough to provide a homogeneous melt without getting too near to the degradation temperature of  $330^{\circ}\text{C}$  /  $626^{\circ}\text{F}$ . A flat or rising temperature profile is recommended.

Mold/Tool	Measured melt	Nozzle	Front	Center	Rear	
80 – 120°C 176 – 248°F	290–310°C 554–590°F	290–320°C 554–608°F	285–305°C 545–581°F	285–305°C 545–581°F	265–305°C 509–581°F	

## MELT RESIDENCE TIME

The optimal Melt Residence Time (MRT) for Stanyl® TC170 is  $\leq 4$  minutes with preferably at least 50% of the maximal shot volume used. The MRT should not exceed 6 minutes.

A full self-service MRT calculation can be done using the following [link](#).

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