

Arnitel® UM551

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This quick start instruction gives an indication of the key settings for processing Arnitel® UM551 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

Arnitel® 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°C / -22 and -40°F . Vacuum driers with N_2 purge can also be used. Hot air ovens or hopper driers are not suitable for pre-drying Arnitel® grades; the use of such driers may result in non-optimum performance.

Moisture content	Time	Temperature	
[%]	[h]	$[^{\circ}\text{C}]$	$[^{\circ}\text{F}]$
<0.05 and as delivered	3–4	100	212
>0.05–0.2	4–6	100	212

TEMPERATURE SETTINGS

Barrel temperature

The given temperature settings are general for Arnitel®. Optimal settings are governed by barrel size and residence time.

Additionally, a higher hardness and higher melting point of the Arnitel®, requires a barrel temperature at the higher side.

Mold/Tool	Measured melt	Nozzle	Front	Center	Rear	
20 – 50°C 68 – 122°F	230–250 $^{\circ}\text{C}$ 446–482 $^{\circ}\text{F}$	230–250 $^{\circ}\text{C}$ 446–482 $^{\circ}\text{F}$	220–240 $^{\circ}\text{C}$ 428–464 $^{\circ}\text{F}$	210–230 $^{\circ}\text{C}$ 410–446 $^{\circ}\text{F}$	200–220 $^{\circ}\text{C}$ 392–428 $^{\circ}\text{F}$	

MELT RESIDENCE TIME

The optimal Melt Residence Time (MRT) for Arnitel® UM551 is ≤ 5 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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