

Arnitel® PL381

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This quick start instruction gives an indication of the key settings for processing Arnitel® PL381 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://envalior.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 N₂ 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 | |
|------------------------|------|-------------|------|
| | | [°C] | [°F] |
| [%] | [h] | | |
| <0.05 and as delivered | 3-4 | 110 | 230 |
| >0.05-0.2 | 4-6 | 110 | 230 |

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°C 446–482°F | 230–250°C 446–482°F | 220–240°C 428–464°F | 210–230°C 410–446°F | 200–220°C 392–428°F |

MELT RESIDENCE TIME

The optimal Melt Residence Time (MRT) for Arnitel® PL381 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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