

INJECTION MOLDING OF

INSPIRE™ TALC FILLED

POLYPROPYLENE RESINS



TRINSEO™

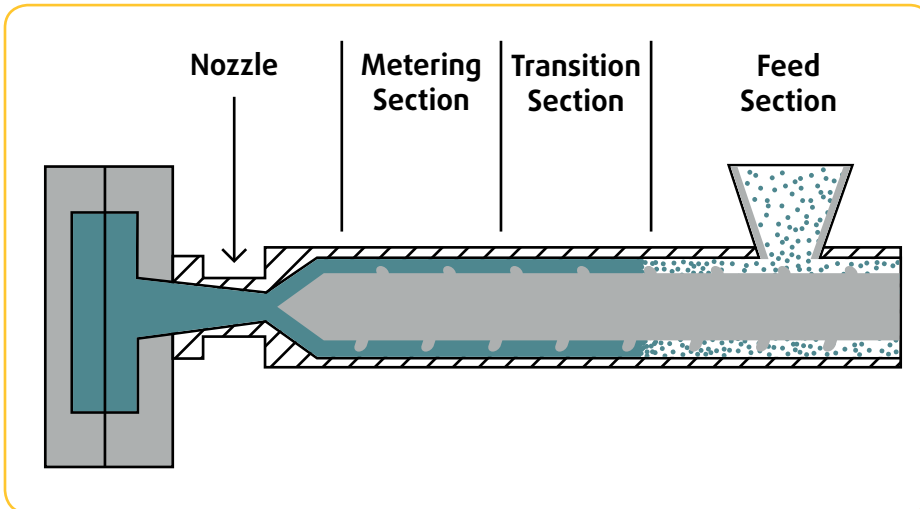
TECHNICAL INFORMATION

Drying

2 hours at $(80 \pm 5)^\circ$

Melt Temperature

Barrel Profile Settings



Feeding zone : 190 à 220°C

Barrel temperature : 220 à 260°C

Typical profile could be 240–220–200–190°C from nozzle to feeding area.

1. Barrel temperatures should be 25°–50°F (15°–30°C) higher than the minimum temperature needed to successfully fill the part.
2. Use a typical barrel temperature profile with the feed section set 30°–50°F (20–30°C) lower than the nozzle.
3. If improved mixing of resin or resin/concentrate is needed, use a bell-shaped temperature profile with both metering section and feed section set lower than the transition section.

NOTE: Barrel temperature settings do not always reflect the actual resin melt temperature. Instead, purge material from the barrel and use a hand-held melt temperature probe to measure actual resin melt temperature from the purged resin.

Mold Temperature

Mold temperature: 20 à 60°C

Hot runner systems: ~ 220°C

Temperatures should be high enough to produce aesthetically good part surfaces. Care must be taken when using excessively high mold temperatures. Problems that can occur at elevated mold temperatures include excessive shrinkage, part warpage, sink marks, and part sticking. In molding polypropylene, the temperature of the part surface upon ejection should be between 50°C–60°C. Reducing part cooling time increases part warpage.

Injection

The injection phase needs to be as fast as possible to reduce internal stresses in the final part and to ease the part filling but without causing excessive pressures. Excessive pressures will cause burning in, dieseling, flashing, and part sticking.

Dosage

Back pressures for polypropylene can range from 2 to 20 bars. Minimal back pressure is recommended. Typically, 5 bars is acceptable for molding polypropylene. Higher back pressure may be required for mixing natural resin with color concentrates, or to achieve more screw shear mixing. Screw speed should be as slow as possible within the cycle time, before opening of the mold.

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