



## Injection Molding Reference Guide

### Product Description

Engage® polyolefin elastomers have a wide processing temperature window. The following temperatures should be used as a reference point and can vary  $\pm 5^{\circ}\text{C}$ . These temperatures should be used as a starting point and can be increased by a maximum of  $+20^{\circ}\text{C}$ .

Note: From starting point, the hopper feed throat should be cooled below  $50^{\circ}\text{C}$  to avoid polymer bridging, especially on Engage® 8400/Engage® 8407.

Successful injection molding of Engage® requires fast injection velocities to promote shear thinning throughout the material. Typical polyolefin equipment should be used.

### If Switching From Another Product

Processing modifications will often be needed for Engage® POEs. Generally these process changes can be summarized below:

- If presently set up for PVC processing, you'll need a colder mold/faster injection speeds
- Versus SBC, you'll need a colder mold/similar injection speeds
- Versus EVA, the processing conditions should be similar

For further information, see "Troubleshooting and Design Guide for Injection Molding Applications."

### Injection Molding Parameters (Starting Point)

Material	Nozzle, °C	Front, °C	Center, °C	Rear, °C
Engage® 8400/8407	190	180	175	120
Engage® 8411	190	180	175	120
Engage® 8401	190	180	175	120
Engage® 8402	200	195	190	120

### Processing Recommendations

Processing/Equipment	Recommendations
Mold temperature, °C	5–15
Screw speed, rpm	40–140
Back pressure, bar	4–10
Injection speed, sec	.4–2.0
Pack pressure, % of injection pressure	50–75
Hold pressure, % of injection pressure	60
Cooling time, sec	20–60
Cushion, mm	3–6
Screw type	General purpose polyolefin screw L/D ratio = 20:1
Nozzle	Compression ratio 2.5:1–3.5:1 General purpose

## Mold Design

Equipment	Recommendations
Gates, mm	0.75 or greater
Runners	Hot runners preferred
Vents, mm	0.04-0.07
Ejection	Air ejection

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