



Extrusion Reference Guide

Product Description

Engage[®] polyolefin elastomers can be used in a variety of extrusion applications, including tubing and other profiles. This guide will provide a processor

with general equipment setup and troubleshooting recommendations to successfully extrude the product.

Extrusion Parameters (Starting Point)

| Material | Melt, °C | Die °C | Adapter, °C | Zone 3, °C | Zone 2, °C | Zone 1, °C |
|-------------------------------------|----------|--------|-------------|------------|------------|------------|
| Engage [®] >.890 density* | 205 | 205 | 205 | 205 | 195 | 180 |
| Engage [®] <.890 density** | 195 | 195 | 195 | 195 | 180 | 170 |

* Recommended >0.890 grades include 8440, 8480, 8540 and developmental product ENR 7086.01

** Recommended <0.890 grades include 8003 and developmental products ENR 7256 and ENR 8556.

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 starting

conditions and can be optimized by increasing the temperatures to maximum of 10°C . The feed throat on Engage[®] polyolefin elastomers <.890 should be kept at room temperature or massing may occur.

Equipment and Processing Recommendations

| Equipment/Processing | Recommendations |
|----------------------|--|
| Extruder | L/D ratio 20:1 or higher |
| Screw Type | General purpose polyolefin screw |
| Compression Ratio | 2.5:1–3.5:1 |
| Screen Pack | 80/60/40 mesh |
| Sizing | Either air or vacuum |
| Water Bath, °C | 5–10 |
| Purge Compound | Polyethylene |
| Drying | Not required |
| Recycling | Fully recyclable. Conventional granulators with sharp blends should be used. Re grind usage of up to 25% is permissible. |
| Coloring | Low density polyethylene or linear low density polyethylene |

Troubleshooting Recommendations

| Problem | Possible Cause | Solution |
|------------------------|----------------------|--|
| Melt fracture | Cold melt | Increase melt temperatures Increase die temperature |
| | Melt not mixed | Use higher compression ratio screw Use screw with mixing section |
| | Poor die design | Decrease land length |
| | Heater not working | Check heaters and thermocouples |
| Uneven cross-section | Surging | Decrease extrusion rate Use screw with long feed or metering section Use finer screen pack to increase back pressure |
| High extruder pressure | Melt too cold | Increase melt temperatures Increase die temperature |
| | Clogged screen packs | Replace screen pack |
| | Heater not working | Check heaters and thermocouples |

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