# CELCON® LW90-F2

CELCON®

Celcon® LW90-F2 is an acetal copolymer formulated with a nominal 9 melt flow rate base polymer and a standard level of polytetrafluoroethylene filler (PTFE). It is designed for use in wear applications against plastic, metal, glass, or ceramic mating surfaces where silicone lubricants can not be tolerated.

## 产品信息

| | | |
|---|---|---|
| 树脂鉴别 | (POM+PTFE) | ISO 1043 |
| 制品标识码 | >(POM+PTFE)< | ISO 11469 |

## 流变性能

| | | | |
|---|---|---|---|
| 熔体体积流动速度 | 8 | $cm^3$/10min | ISO 1133 |
| 温度 | 190 | °C | |
| 负荷 | 2.16 | kg | |
| 模塑收缩率, 平行 | 2.3 | % | ISO 294-4, 2577 |
| 模塑收缩率, 垂直 | 1.9 | % | ISO 294-4, 2577 |

## 机械性能

| | | | |
|---|---|---|---|
| 拉伸模量 | 2650 | MPa | ISO 527-1/-2 |
| 拉伸屈服应力, 50mm/min | 63 | MPa | ISO 527-1/-2 |
| 屈服伸长率, 50mm/min | 9 | % | ISO 527-1/-2 |
| 弯曲模量 | 2600 | MPa | ISO 178 |
| 3.5%应变时的弯曲应力 | 72 | MPa | ISO 178 |
| 1%形变时的压缩应力 | 27.6 | MPa | ISO 604 |
| 简支梁无缺口冲击强度, 23°C | 120 | $kJ/m^2$ | ISO 179/1eU |
| 简支梁无缺口冲击强度, -30°C | 120 | $kJ/m^2$ | ISO 179/1eU |
| 简支梁缺口冲击强度, 23°C | 5 | $kJ/m^2$ | ISO 179/1eA |
| 悬臂梁缺口冲击强度, 23°C | 5.1 | $kJ/m^2$ | ISO 180/1A |

## 热性能

| | | | |
|---|---|---|---|
| 熔融温度, 10°C/min | 166 | °C | ISO 11357-1/-3 |
| 热变形温度, 1.8 MPa | 98 | °C | ISO 75-1/-2 |
| 线性热膨胀系数, 平行 | 100 | E-6/K | ISO 11359-1/-2 |
| 线性热膨胀系数, 垂直 | 90 | E-6/K | ISO 11359-1/-2 |

## 其它性能

| | | | |
|---|---|---|---|
| 密度 | 1400 | $kg/m^3$ | ISO 1183 |

## 注塑

| | | |
|---|---|---|
| 建议干燥 | 否 | |
| 干燥温度 | 100 | °C |
| 干燥时间，除湿干燥机 | 3 - 4 | h |
| 加工前水分含量 | ≤ 0.2 | % |
| 最优熔体温度 | 190 | °C |
| 最低熔体温度*** | 180 | °C |
| 最高熔体温度 | 200 | °C |
| 螺杆最大切线速度 | ≤ 0.3 | m/s |
| 最优模具温度 | 100 | °C |
| 最低模具温度 | 80 | °C |

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| | | |
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| 最高模具温度 | 120 | °C |
| 保压范围 | 60 - 120 | MPa |
| 保压时间 (h表示部件的最大壁厚mm) | 2h²-3 | s |
| 背压 | 2 | MPa |

## 特性

| | |
|---|---|
| 加工方法 | 注塑 |
| 特殊性能 | 低磨损/低摩擦 |

## 其他信息

注塑

### Preprocessing

Drying is generally not required because Celcon® and Hostaform® acetal copolymers are not hydroscopic nor are they degraded by moisture during processing. Excessive moisture can lead to splay (silver streaking) in molded parts. For better uniformity in molding especially when using regrind or material that has been stored in containers open to the atmosphere, recommended drying conditions are 80 C (180 F) for 3hours. Desiccant hopper dryers are not required. Maximum water content = 0.35%

### Processing

Standard reciprocating screw injection molding machines with a high compression screw (minimum 3:1 and preferably 4:1) and low back pressure (0.35 Mpa/50 PSI) are favored. Using a low compression screw (I.E. general purpose 2:1 compression ratio) can result in unmelted particles and poor melt homogeneity. Using a high back pressure to make up for a low compression ratio may lead to excessive shear heating and deterioration of the material.

Melt Temperature: Preferred range 182-199 C (360-390 F). Melt temperature should never exceed 230 C (450 F).

Mold Surface Temperature: Preferred range 82-93 C (180-200 F) especially with wall thickness less than 1.5 mm (0.060 in.). May require mold temperature as high as 120 C (250 F) to reproduce mold surface or to assure minimal molded in stress. Wall thickness greater than 3mm (1/8 in.) may use a cooler (65 C/150 F) mold surface temperature and wall thickness over 6mm (1/4 in.) may use a cold mold surface down to 25 C (80 F). In general, mold surface temperatures lower than 82 C (180 F) may hinder weld line formation and produce a hazy surface or a surface with flow lines, pits and other included defects that can hinder part performance.

### Postprocessing

Postprocessing conditioning and moisturizing are not required. It may be necessary to fixture large or complicated parts with varying wall thickness to prevent warpage while cooling to ambient temperature.

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加工注意事项

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## Pre-Drying

Drying is not normally required. If material has come in contact with moisture through improper storage or handling or through regrind use, drying may be necessary to prevent splay and odor problems.



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