Ceolcon® M90™
Acetal (POM) Copolymer
Celanese Corporation

Technical Data

Product Description

Ceolcon acetal copolymer grade M90™ is a medium viscosity polymer providing optimum performance in general purpose injection molding and extrusion of thin walled tubing and thin gauge film. This grade provides overall excellent performance in many applications.

Chemical abbreviation according to ISO 1043-1: POM

Please also see Hostaform® C 9021.

General

Material Status

- Commercial: Active

Literature

- Technical Datasheet - ASTM (English)
- Technical Datasheet - ISO (English)

UL Yellow Card

- E113269-100967688
- E38860-239310
- E38860-101305515

Search for UL Yellow Card

- Celanese Corporation
- Celcon®

Availability

- Latin America
- North America

Features

- General Purpose
- Medium Viscosity

Uses

- General Purpose
- Thin-walled Parts
- Tubing

RoHS Compliance

- Contact Manufacturer

Processing Method

- Injection Molding

Multi-Point Data

- Isochronous Stress vs. Strain (ISO 11403-1)
- Isothermal Stress vs. Strain (ISO 11403-1)

Resin ID (ISO 1043)

- POM

Physical

Nominal Value (English) | Nominal Value (SI) | Test Method
--- | --- | ---
Specific Gravity
- 1.41 | 1.41 g/cm³ | ASTM D792
- 1.41 g/cm³ | ISO 1183
Melt Mass-Flow Rate (MFR)
- 9.0 g/10 min | 9.0 g/10 min | ASTM D1238
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)
- 0.488 in³/10min | 8.00 cm³/10min | ISO 1133
Molding Shrinkage
- Flow 0.022 in/in | 2.2 % | ASTM D955
- Across Flow 0.018 in/in | 1.8 % | ASTM D955
- Across Flow 1.9 % | 1.9 % | ISO 294-4
- Flow 2.0 % | 2.0 % | ISO 294-4
Water Absorption
- Saturation, 73°F (23°C) 0.75 % | 0.75 % | ISO 62
- Equilibrium, 73°F (23°C), 50% RH 0.20 % | 0.20 % | ISO 62

Mechanical

Nominal Value (English) | Nominal Value (SI) | Test Method
--- | --- | ---
Tensile Modulus
- 400000 psi | 2760 MPa | ISO 527-2/1A/1
Tensile Strength
- Yield, -40°F (-40°C) 13700 psi | 94.5 MPa | ASTM D638
- Yield, 73°F (23°C) 8800 psi | 60.7 MPa | ASTM D638
- Yield, 160°F (71°C) 5000 psi | 34.5 MPa | ASTM D638
- Yield 9570 psi | 66.0 MPa | ISO 527-2/1A/50
Tensile Strain (Yield) 10 % | 10 % | ISO 527-2/1A/50
Tensile Creep Modulus
- 1 hr 355000 psi | 2450 MPa | ISO 899-1
- 1000 hr 196000 psi | 1350 MPa | ISO 899-1
Flexural Modulus (73°F (23°C)) 370000 psi | 2550 MPa | ISO 178
### Impact

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charpy Notched Impact Strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-22°F (-30°C)</td>
<td>2.9 ft·lb/in²</td>
<td>6.0 kJ/m²</td>
</tr>
<tr>
<td>73°F (23°C)</td>
<td>2.9 ft·lb/in²</td>
<td>6.0 kJ/m²</td>
</tr>
<tr>
<td>Charpy Unnotched Impact Strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-22°F (-30°C)</td>
<td>86 ft·lb/in²</td>
<td>180 kJ/m²</td>
</tr>
<tr>
<td>73°F (23°C)</td>
<td>89 ft·lb/in²</td>
<td>190 kJ/m²</td>
</tr>
<tr>
<td>Notched Izod Impact Strength (73°F (23°C))</td>
<td>2.7 ft·lb/in²</td>
<td>5.7 kJ/m²</td>
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</table>

### Thermal

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Deflection Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66 psi (0.45 MPa), Unannealed</td>
<td>316 °F</td>
<td>158 °C</td>
</tr>
<tr>
<td>264 psi (1.8 MPa), Unannealed</td>
<td>230 °F</td>
<td>110 °C</td>
</tr>
<tr>
<td>264 psi (1.8 MPa), Unannealed</td>
<td>214 °F</td>
<td>101 °C</td>
</tr>
<tr>
<td>Melting Temperature¹</td>
<td>329 °F</td>
<td>165 °C</td>
</tr>
</tbody>
</table>

### Electrical

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Resistivity</td>
<td>3.0E+16 ohm</td>
<td>3.0E+16 ohm</td>
</tr>
<tr>
<td>Volume Resistivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--</td>
<td>1.0E+14 ohm-cm</td>
<td>1.0E+14 ohm-cm</td>
</tr>
<tr>
<td>--</td>
<td>8.0E+14 ohm-cm</td>
<td>8.0E+14 ohm-cm</td>
</tr>
</tbody>
</table>

### Fill Analysis

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density of Melt</td>
<td>74.91 lb/ft³</td>
<td>1.200 g/cm³</td>
</tr>
<tr>
<td>Ejection Temperature</td>
<td>329 °F</td>
<td>165 °C</td>
</tr>
<tr>
<td>Specific Heat Capacity of Melt</td>
<td>0.528 Btu/lb/°F</td>
<td>2210 J/kg/°C</td>
</tr>
<tr>
<td>Thermal Conductivity of Melt</td>
<td>1.1 Btu·in/hr/ft²/°F</td>
<td>0.16 W/m/K</td>
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</table>

### Additional Information

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
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<tbody>
<tr>
<td>Effective Thermal Diffusivity</td>
<td>0.0485 cSt</td>
<td>0.0485 cSt</td>
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### Injection

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drying Temperature</td>
<td>176 to 212 °F</td>
<td>80.0 to 100 °C</td>
</tr>
<tr>
<td>Drying Time</td>
<td>3.0 hr</td>
<td>3.0 hr</td>
</tr>
<tr>
<td>Rear Temperature</td>
<td>338 to 356 °F</td>
<td>170 to 180 °C</td>
</tr>
<tr>
<td>Middle Temperature</td>
<td>356 to 374 °F</td>
<td>180 to 190 °C</td>
</tr>
<tr>
<td>Front Temperature</td>
<td>356 to 374 °F</td>
<td>180 to 190 °C</td>
</tr>
<tr>
<td>Nozzle Temperature</td>
<td>374 to 392 °F</td>
<td>190 to 200 °C</td>
</tr>
<tr>
<td>Processing (Melt) Temp</td>
<td>356 to 392 °F</td>
<td>180 to 200 °C</td>
</tr>
<tr>
<td>Mold Temperature</td>
<td>176 to 248 °F</td>
<td>80.0 to 120 °C</td>
</tr>
<tr>
<td>Injection Pressure</td>
<td>8700 to 17400 psi</td>
<td>60.0 to 120 MPa</td>
</tr>
<tr>
<td>Injection Rate</td>
<td>Slow-Moderate</td>
<td>Slow-Moderate</td>
</tr>
<tr>
<td>Holding Pressure</td>
<td>8700 to 17400 psi</td>
<td>60.0 to 120 MPa</td>
</tr>
<tr>
<td>Back Pressure</td>
<td>0.00 to 72.5 psi</td>
<td>0.00 to 0.500 MPa</td>
</tr>
</tbody>
</table>

### Injection Notes

- **Manifold Temperature**: 180 to 200°C
- **Zone 4 Temperature**: 190 to 200°C
Notes

1. These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

2. A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

3. Typical properties: these are not to be construed as specifications.

4. 10°C/min
### Where to Buy

**Supplier**

Celanese Corporation  
Florence, KY USA  
**Telephone:** 800-833-4882  
**Web:** http://www.celanese.com/engineered-materials

**Distributor**

Amco Polymers  
**Telephone:** 800-262-6685  
**Web:** http://www.amcopolymers.com/  
**Availability:** North America

Channel Prime Alliance  
**Telephone:** 800-247-8038  
**Web:** http://www.channelpa.com/  
**Availability:** North America

Entec Polymers  
**Telephone:** 800-375-5440  
**Web:** http://www.entecpolymers.com/  
**Availability:** North America

The information presented on this datasheet was acquired by UL Prospector from the producer of the material. UL Prospector makes substantial efforts to assure the accuracy of this data. However, UL Prospector assumes no responsibility for the data values and strongly encourages that upon final material selection, data points are validated with the material supplier.