
CELCON® MC90 | POM | Mineral Reinforced

Description

Celcon® acetal copolymer grade MC90 is a mineral reinforced grade offering low warp, improved dimensional stability, improved stiffness, improved practical impact and retention of other base resin properties with good moldability.

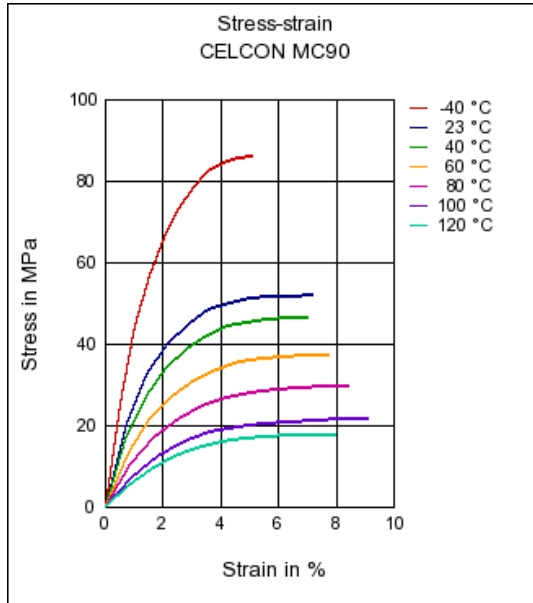
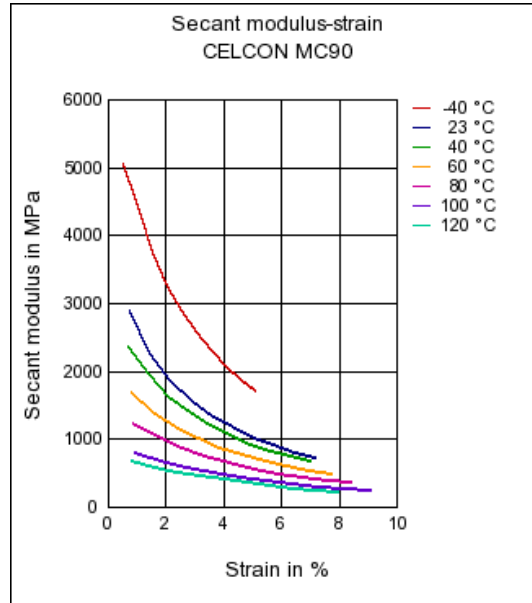
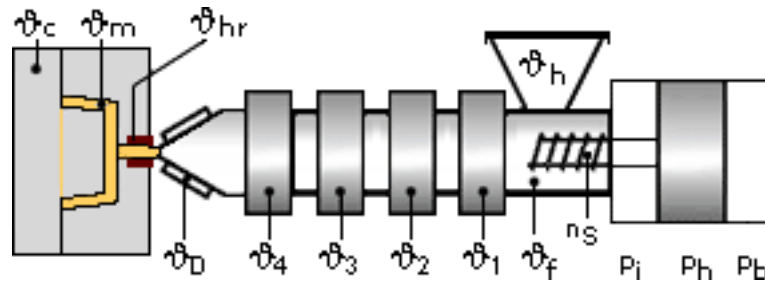
Chemical abbreviation according to ISO 1043-1: POM
Molding compound ISO 9988- POM-K, M-GNR, 03-002, M

Physical properties	Value	Unit	Test Standard
Density	1480	kg/m ³	ISO 1183
Mold shrinkage - parallel	1.9	%	ISO 294-4
Mold shrinkage - normal	1.6	%	ISO 294-4
Water absorption (23°C-sat)	0.75	%	ISO 62
Humidity absorption (23°C/50%RH)	0.2	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	3000	MPa	ISO 527-2/1A
Tensile stress at yield (50mm/min)	57	MPa	ISO 527-2/1A
Tensile strain at yield (50mm/min)	8	%	ISO 527-2/1A
Flexural modulus (23°C)	2850	MPa	ISO 178
Charpy notched impact strength @ 23°C	6.8	kJ/m ²	ISO 179/1eA
Charpy notched impact strength @ -30°C	5.5	kJ/m ²	ISO 179/1eA
Notched impact strength (Izod) @ 23°C	6.3	kJ/m ²	ISO 180/1A

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	165	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	97	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	152	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	1	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	1.2	E-4/°C	ISO 11359-2

Test specimen production	Value	Unit	Test Standard
Processing conditions acc. ISO	9988-2	-	Internal

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Stress-strain

Secant modulus-strain

Typical injection moulding processing conditions


Pre Drying:

Drying time: 3 h

Drying temperature: 80 - 100 °C

Temperature:

	$\varnothing_{\text{Manifold}}$	$\varnothing_{\text{Mold}}$	$\varnothing_{\text{Melt}}$	$\varnothing_{\text{Nozzle}}$	$\varnothing_{\text{Zone4}}$	$\varnothing_{\text{Zone3}}$	$\varnothing_{\text{Zone2}}$	$\varnothing_{\text{Zone1}}$
min (°C)	190	80	180	190	190	180	180	170
max (°C)	200	120	200	200	200	190	190	180

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Pressure:

	Inj press	Hold press	Back pressure
min (bar)	600	600	0
max (bar)	1200	1200	5

Speed:**Injection speed: slow**

Injection Molding

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.

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Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

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We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed (+49 (0) 69 30516299 for Europe, +1 859-372-3244 for the Americas and +86 21 3861 9266 for Asia) for additional technical information. Visit our web site for the appropriate Safety Data Sheets (SDS) before attempting to process our products. Feel free to call Customer Services for additional assistance.

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