CELCON® MC90-HM - POM

Description

Celcon® MC90-HM is a highly mineral filled and coupled M90 material for producing very flat and dimensionally stable parts (normal flow).

Physical properties	Value	Unit	Test Standard
Density	**1570**	kg/m³	ISO 1183
Molding shrinkage, parallel	**1.5**	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.3**	%	ISO 294-4, 2577
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	**3550**	MPa	ISO 527-2/1A
Tensile stress at yield, 50mm/min	**45**	MPa	ISO 527-2/1A
Tensile strain at yield, 50mm/min	**6**	%	ISO 527-2/1A
Flexural modulus, 23°C	**3500**	MPa	ISO 178
Flexural strength, 23°C	**72**	MPa	ISO 178
Charpy notched impact strength, 23°C	**6.3**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**4.9**	kJ/m²	ISO 179/1eA
Izod impact notched, 23°C	**6.1**	kJ/m²	ISO 180/1A
Compressive stress at 1% strain	**28**	MPa	ISO 604
Compressive stress at 6% strain	**83**	MPa	ISO 604

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**165**	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	**103**	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 50N	**161**	°C	ISO 306
Coeff. of linear therm expansion, parallel	**0.6**	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	**0.9**	E-4/°C	ISO 11359-2

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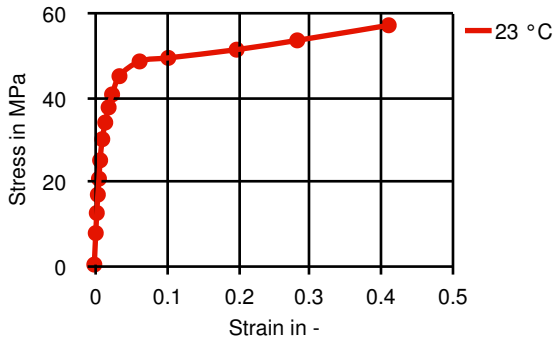
Diagrams

True Stress-strain



Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Drying time	**3 - 4**	h	-
Drying temperature	**100 - 120**	°C	-
Temperature	**Value**	**Unit**	**Test Standard**
Zone1 temperature	**170 - 180**	°C	-
Zone2 temperature	**180 - 190**	°C	-
Zone3 temperature	**180 - 190**	°C	-
Zone4 temperature	**190 - 200**	°C	-
Nozzle temperature	**190 - 200**	°C	-
Melt temperature	**180 - 200**	°C	-
Mold temperature	**80 - 120**	°C	-
Hot runner temperature	**190 - 200**	°C	-
Pressure	**Value**	**Unit**	**Test Standard**
Back pressure max.	**40**	bar	-
Speed	**Value**	**Unit**	**Test Standard**
Injection speed	**slow**	-	-

Other text information

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.

Characteristics

Product Categories	Delivery Form
Mineral reinforced	Pellets
Processing	**Additives**
Injection molding	Release agent

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General Disclaimer

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