

## CELCON® LW140-03 (PRELIMINARY)

CELCON®

Product information

Celcon® LW140-03 is a low wear grade designed for gears and other low wear applications, especially where reducing noise and wear in low load-high velocity applications. Celcon® LW140-03 is an option where silicone or PTFE based wear resistant products are not acceptable.

Product information				
Resin Identification		POM		ISO 1043
Part Marking Code		>POM<		ISO 11469
Rheological properties				
Melt volume-flow rate		15	cm <sup>3</sup> /10min	ISO 1133
Temperature		190	°C	
Load		2.16	kg	
Moulding shrinkage, parallel		1.9		ISO 294-4, 2577
Moulding shrinkage range, parallel		1.7 - 2.2 1.7		ISO 294-4, 2577
Moulding shrinkage, normal Moulding shrinkage range, normal		۱. <i>۲</i> 1.4 - 2		ISO 294-4, 2577 ISO 294-4, 2577
Moduling shirikage range, normal		1.4 - 2	70	130 294-4, 2377
Typical mechanical properties				
Tensile modulus			MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min			MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min		7.7		ISO 527-1/-2
Tensile strain at break, 50mm/min Flexural modulus		15		ISO 527-1/-2 ISO 178
Flexural stress at 3.5%			MPa MPa	ISO 178 ISO 178
Charpy notched impact strength, 23°	C		kJ/m <sup>2</sup>	ISO 179/1eA
Poisson's ratio	•	0.38 <sup>[C]</sup>	Ko/m	
[C]: Calculated				
<b>T</b> I I I I I I				
Thermal properties				
Melting temperature, 10°C/min		166		ISO 11357-1/-3
Temperature of deflection under load,	, 1.8 MPa	88	°C	ISO 75-1/-2
Physical/Other properties				
Density		1360	kg/m³	ISO 1183
Characteristics				
Processing	Injection Moulding			
Delivery form	Pellets			
Special characteristics	Low wear / Low friction			
Opecial characteristics				
Additional information				

Injection molding

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

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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.

**Processing Notes** 

#### 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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The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded 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. Other than those product expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, 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. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication is accurate; however, we do not respective of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to he lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique o

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