

CELCON®

Celcon® GB25 acetal copolymer is a 25% glass bead filled grade for low shrinkage and warp resistance in large, flat and thin walled parts.

Chemical abbreviation according to ISO 1043-1: POM

			4.5
Prod	LICT	intor	mation

Resin Identification Part Marking Code	POM-GB25 >POM-GB25<		ISO 1043 ISO 11469
Rheological properties			
Melt volume-flow rate Melt mass-flow rate Temperature Load Melt mass-flow rate, Temperature Melt mass-flow rate, Load Moulding shrinkage, parallel	17 190 2.16 190 2.16 1.5	kg °C kg %	ISO 1133 ISO 1133
Moulding shrinkage, normal	1.3	%	ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus Tensile stress at yield, 50mm/min Tensile strain at yield, 50mm/min Flexural modulus Compressive stress at 1% strain Charpy notched impact strength, 23°C Charpy notched impact strength, -30°C Izod notched impact strength, 23°C Izod impact strength, -40°C Poisson's ratio	4 3600 29 2.4 2.2 2.6	MPa %	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 178 ISO 604 ISO 179/1eA ISO 179/1eA ISO 180/1A ISO 180/1U
Thermal properties			
Melting temperature, 10°C/min Temperature of deflection under load, 1.8 MPa Coefficient of linear thermal expansion (CLTE), parallel Coefficient of linear thermal expansion (CLTE), normal			ISO 11357-1/-3 ISO 75-1/-2 ISO 11359-1/-2 ISO 11359-1/-2
Flammability			
Oxygen index	15.6	%	ISO 4589-1/-2
Physical/Other properties			
Humidity absorption, 2mm Water absorption, 2mm Water absorption, Immersion 24h Density	0.2 0.65 0.2 1620	%	Sim. to ISO 62 Sim. to ISO 62 Sim. to ISO 62 ISO 1183

Printed: 2024-09-05 Page: 1 of 4

Revised: 2024-05-14 Source: Celanese Materials Database



CELCON®

Injection

Drying Recommended	no	
Drying Temperature	100	°C
Drying Time, Dehumidified Dryer	3 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	190	°C
Min. melt temperature	180	°C
Max. melt temperature	200	°C
Screw tangential speed	≤0.3	m/s
Mold Temperature Optimum	105	°C
Min. mould temperature	90	°C
Max. mould temperature	120	°C
Hold pressure range	60 - 120	MPa
Back pressure	2	MPa

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 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

Printed: 2024-09-05 Page: 2 of 4

Revised: 2024-05-14 Source: Celanese Materials Database



CELCON®

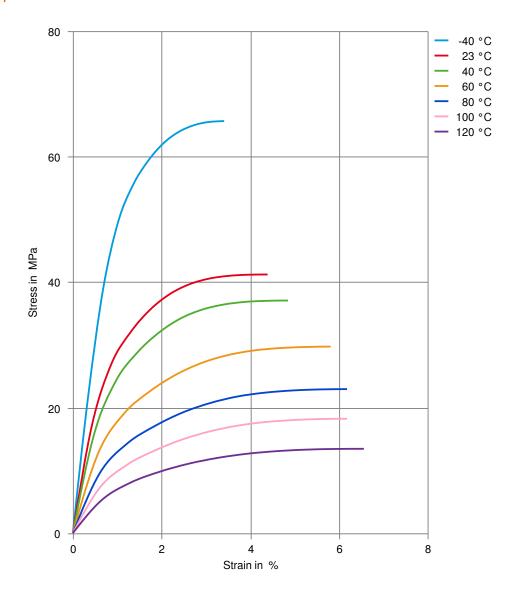
Postprocessing conditioning and moisturizing are not required. It may be necessary to fixture large or complicated parts with varying wall thickness to prevent warpage while cooling to ambient temperature.

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.

Stress-strain



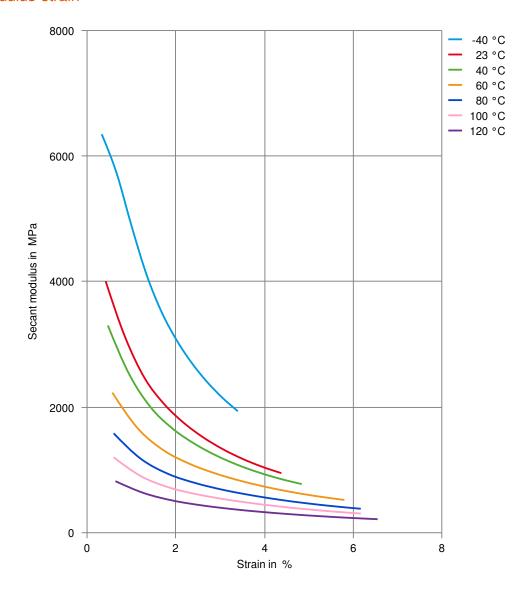
Printed: 2024-09-05 Page: 3 of 4

Revised: 2024-05-14 Source: Celanese Materials Database



CELCON®

Secant modulus-strain



Printed: 2024-09-05 Page: 4 of 4

Revised: 2024-05-14 Source: Celanese Materials Database

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 conditions and environmental exposure. Other than those products 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 should not be construed as a promise or guarantee of specific properties 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 the 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, pr

© 2024 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC. KEPITAL is a registered trademark of Korea Engineering Plastics Company, Ltd.