

CELCON[®] GC25TF

CELCON®

Celcon® GC25TF is a 25% glass coupled acetal copolymer formulated for higher flow in thin walled and small parts. Celcon® GC25TF is also exceptionally resistant to fuel. It offers excellent resistance to transportation fuels especially oxygenated fuels. Chemical abbreviation according to ISO 1043-1: POM

Product information

Resin Identification Part Marking Code	POM-GF25 >POM-GF25<		ISO 1043 ISO 11469
Rheological properties			
Moulding shrinkage, parallel Moulding shrinkage, normal	0.6 1.2		ISO 294-4, 2577 ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus Tensile stress at break, 5mm/min Tensile strain at break, 5mm/min Flexural modulus Compressive strength Compressive strength Compressive strength, 23°C Charpy impact strength, 23°C Izod notched impact strength, 23°C Poisson's ratio	120 2.2 8710 131 69 38 6.4	MPa MPa MPa MPa kJ/m ² kJ/m ²	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 178 ISO 604 ISO 604 ISO 179/1eU ISO 179/1eA ISO 180/1A
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 Density	0.2 0.8 1580		Sim. to ISO 62 Sim. to ISO 62 ISO 1183
Injection			
Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Min. melt temperature	no 100 3 - 4 ≤0.2 200 190	h % °C	

Printed: 2024-09-05



CELCON[®] GC25TF

CELCON®

Max. melt temperature Screw tangential speed Mold Temperature Optimum Min. mould temperature Max. mould temperature Hold pressure range Back pressure

210 °C ≤0.3 m/s 105 °C 90 °C 120 °C 60 - 120 MPa 2 MPa

Additional information

Injection molding

Preprocessing

Drying is generally not required because Celcon materials 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 three hours. Desiccant hopper dryers are not required. Max. 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 Celcon 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 93-121 C (200-250 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 3 mm (1/8 in.) may use a cooler (65 C/150 F) mold surface temperature and wall thickness over 6 mm (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 produce a hazy surface or a surface with flow lines, pits and other included defects.

Postprocessing

Postprocessing conditioning and moisturizing 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.

Printed: 2024-09-05



CELCON[®] GC25TF

CELCON®

Chemical Media Resistance

Standard Fuels

- ✓ ISO 1817 Liquid 1 E5, 60°C
- ISO 1817 Liquid 2 M15E4, 60°C
- ISO 1817 Liquid 3 M3E7, 60°C
- ISO 1817 Liquid 4 M15, 60°C
- Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C

Symbols used:

possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

X not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

Printed: 2024-09-05

Page: 3 of 3

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, 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 assume any liability of 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, processing technique or material mentioned in this publication

© 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.