CELCON® FR-20H

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CELCON® FR-20H is a hot diesel medium-low viscosity grade providing excellent resistance to sour or hot diesel not sacrificing acetal's own mechanical properties. CELCON® FR-20H has a dark yellow color.

Product information

Resin Identification	POM		ISO 1043
Part Marking Code	>POM<		ISO 11469

Rheological properties

Melt mass-flow rate	13	g/10min	ISO 1133
Melt mass-flow rate, Temperature	374	°F	
Melt mass-flow rate, Load	4.76	lb	
Molding shrinkage, parallel	1.6	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	377000	psi	ISO 527-1/-2
Tensile stress at yield, 50mm/min	8700	psi	ISO 527-1/-2
Tensile strain at yield, 50mm/min	8.5	%	ISO 527-1/-2
Nominal strain at break	31	%	ISO 527-1/-2
Flexural modulus	363000	psi	ISO 178
Flexural strength	11600	psi	ISO 178
Charpy notched impact strength, 23°C	3.33	ftlb/in^2	ISO 179/1eA
Poisson's ratio	0.402		

Thermal properties

Melting temperature, 10°C/min	329	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	194	°F	ISO 75-1/-2

Electrical properties

Electric strength	483	kV/in	IEC 60243-1

Physical/Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Density	0.0509	lb/in^3	ISO 1183

Injection

Drying Recommended	no	
Drying Temperature	212	°F
Drying Time, Dehumidified Dryer	3 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	383	°F
Min. melt temperature	356	°F
Max. melt temperature	410	°F
Max. screw tangential speed	≤0.3	m/s
Mold Temperature Optimum	158	°F
Min. mold temperature	140	°F
Max. mold temperature	176	°F

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Hold pressure range	8700 - 17400	psi
Hold Pressure Time (h is the max. wall thickness of the part in mm)	$2h^2$-3	s

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
BMW	GS93016	Pyeongtaek,Korea
Ford	WSS-M98P14-A3	ASN 9955
Ford	WSS-M98P14-A7	ASN 10044
General Motors	GMW18026P-POM	Natural
General Motors	GMW18026P-POM	Black
Hyundai	MS237-14 Type A	Pyeongtaek,Korea
Mercedes-Benz	DBL5405	Pyeongtaek,Korea
Stellantis	B62 0300 / 61/211E-210M/H510G(Ecolium 30 Bio-diesel)/H506G(Eolys PowerFlex-InfineumF7995)/H509G (GO PSA)	01994_13_00088

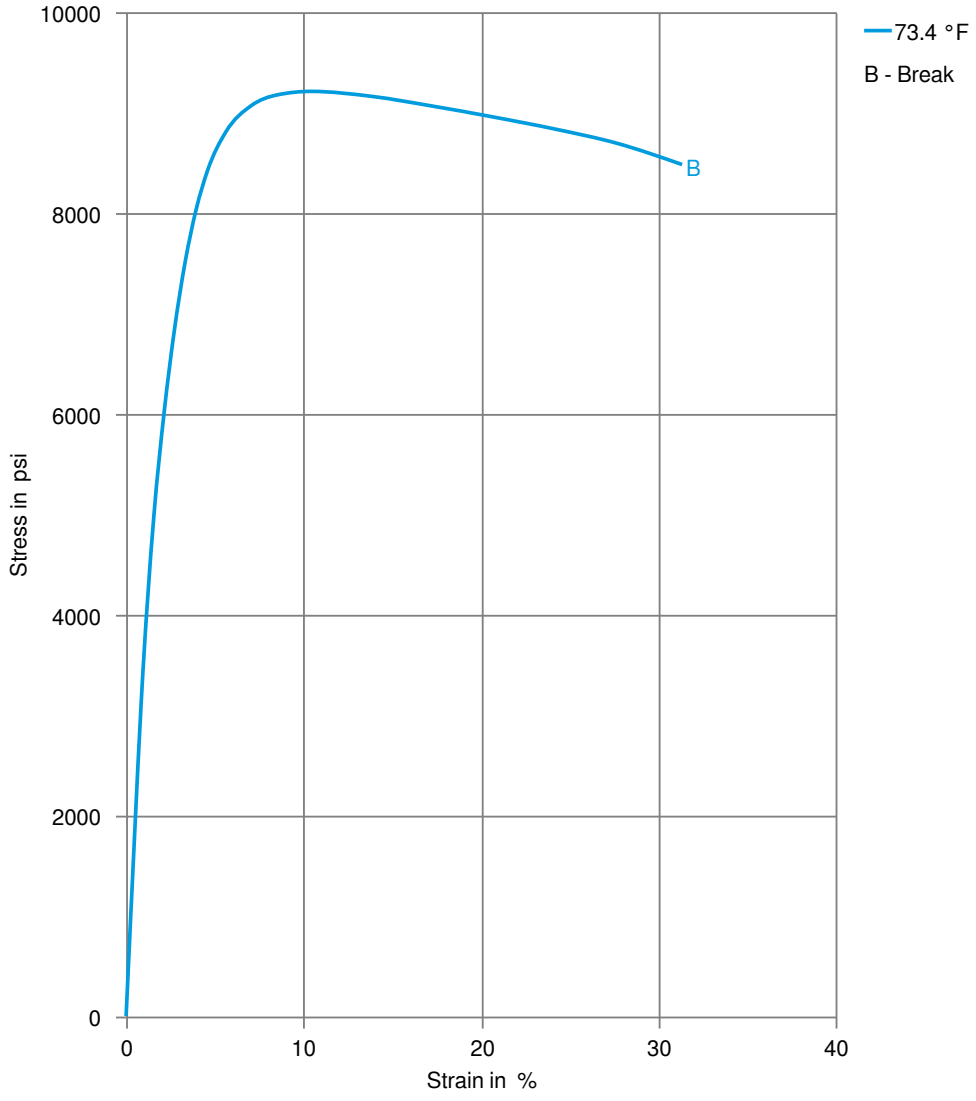
Characteristics

Processing	Injection Molding

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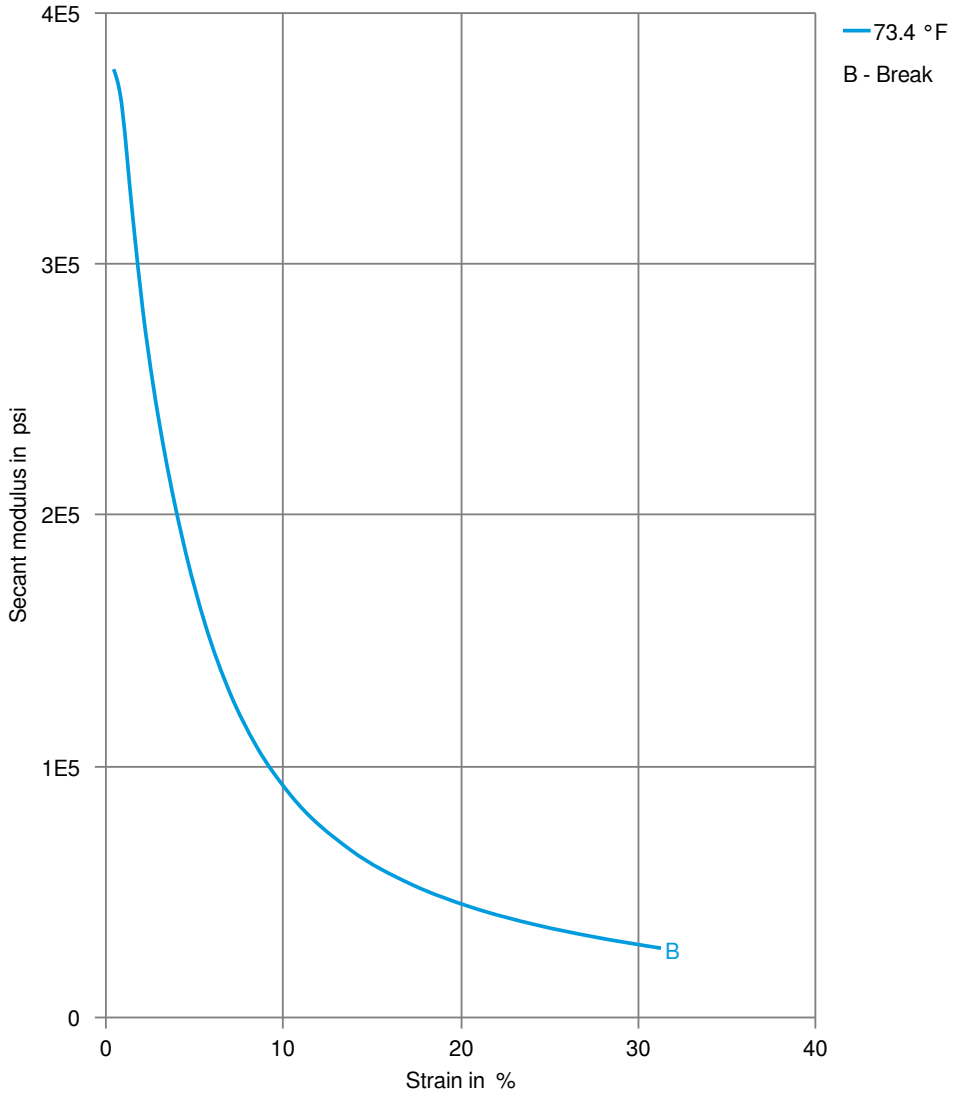
Stress-strain



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Secant modulus-strain



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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).

✘ 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).

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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. Colorants or other additives may cause significant variations in data values. 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. 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, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. 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 for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.
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