Celanese
The chemistry inside innovation™

CELCON® UV140LG

UV resistant - automotive, low gloss surface, broad range of colors
Celcon® acetal copolymer grade UV140LG is a specialty grade of acetal copolymer formulated to provide good flow with a low gloss finish and a UV stability necessary for interior automotive applications.

Rheological properties

Melt volume-flow rate	13	cm^3/10min	ISO 1133
Melt mass-flow rate	14.5	g/10min	ISO 1133
Temperature	190	°C	
Load	2.16	kg	
Melt mass-flow rate, Temperature	190	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage range, parallel	1.6	%	ISO 294-4, 2577
Moulding shrinkage range, normal	1.5	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	1950	MPa	ISO 527-1/-2
Yield stress, 50mm/min	41	MPa	ISO 527-1/-2
Yield strain, 50mm/min	10	%	ISO 527-1/-2
Nominal strain at break	11	%	ISO 527-1/-2
Flexural Modulus	1900	MPa	ISO 178
Flexural Stress at 3.5%	50	MPa	ISO 178
Tensile creep modulus, 1h	1300	MPa	ISO 899-1
Tensile creep modulus, 1000h	650	MPa	ISO 899-1
Charpy notched impact strength, 23°C	3.1	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	4	kJ/m^2	ISO 180/1A
Poisson's ratio	0.46		

Thermal properties

Melting temperature, 10°C/min	165	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	80	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	138	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	161	°C	ISO 306
Coeff. of linear therm. expansion, parallel	130	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	130	E-6/K	ISO 11359-1/-2

Other properties

Density	1330	kg/m^3	ISO 1183

Injection

Drying Temperature	100 - 120	°C	
Drying Time, Dehumidified Dryer	3 - 4	h	
Melt Temperature Optimum	195	°C	Internal
Max. mould temperature	80 - 105	°C	

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Back pressure	4 MPa
Injection speed	slow

Additional 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. Use a slow injection speed until material passes through the gate. Melt Temperature: Preferred range 180-195 C (~356-~383 F). Melt temperature should never exceed 230 C (450 F). Mold Surface Temperature: Preferred range 80-105 C 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. 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.

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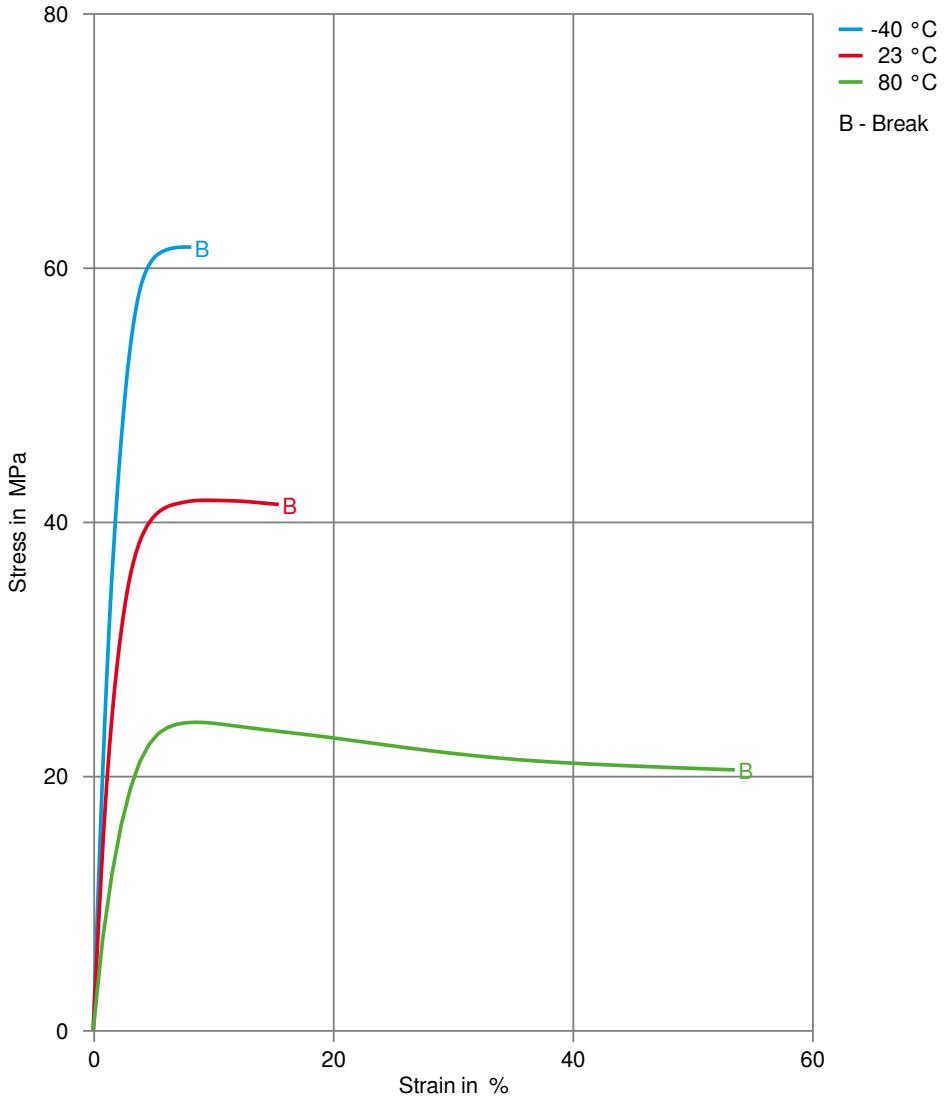
Stress-strain



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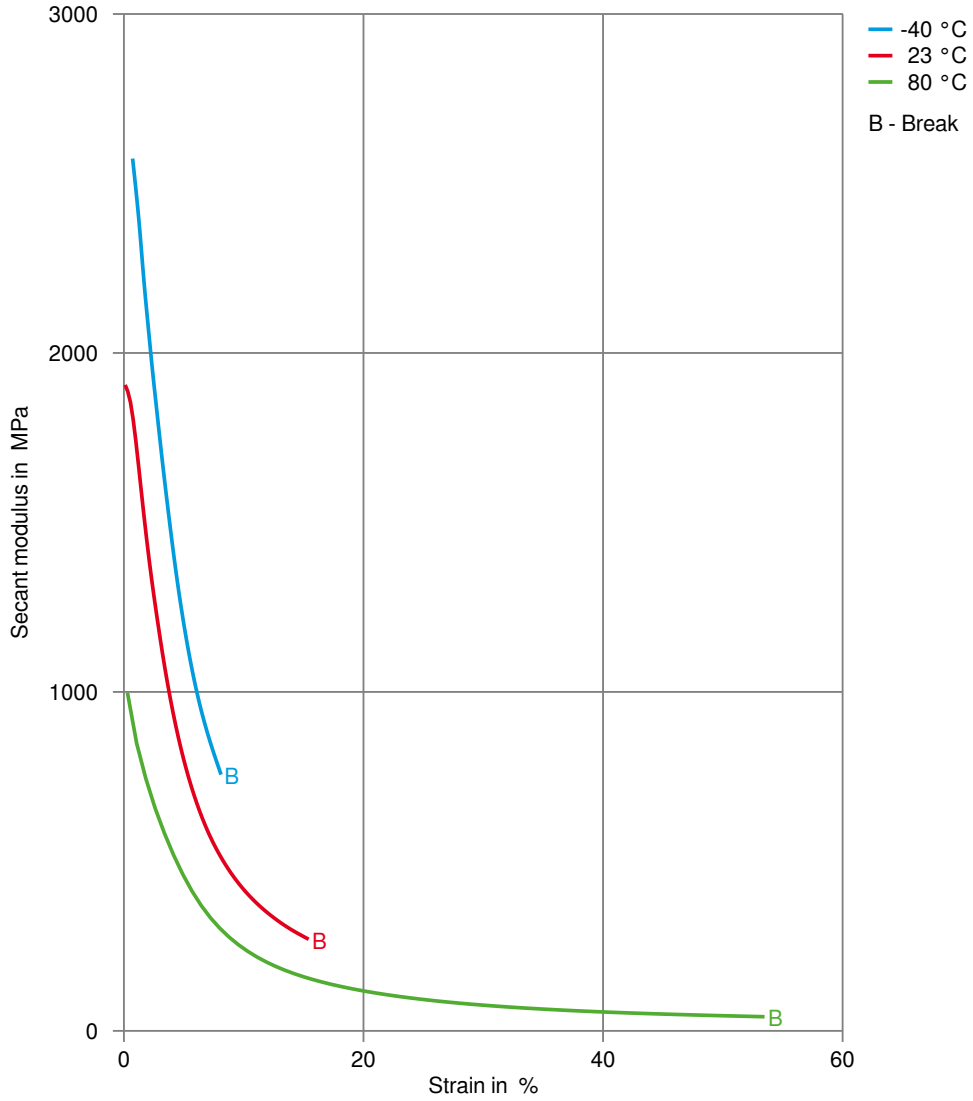
Secant modulus-strain



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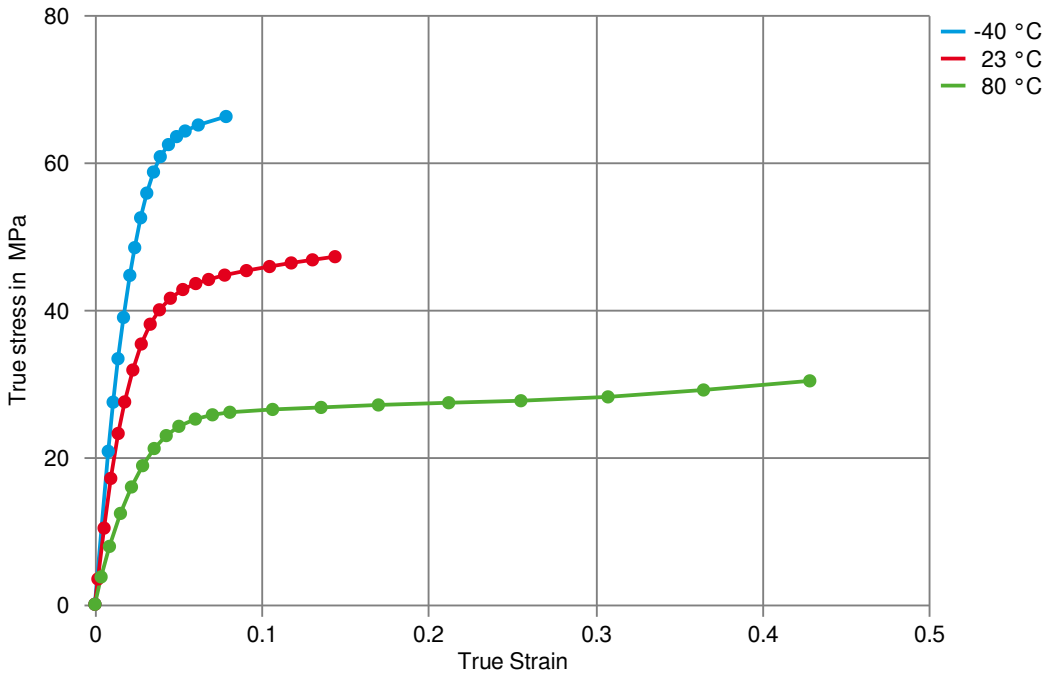
True stress-strain



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Processing Texts

Pre-drying	Predrying is required before processing to ensure a low gloss finish.
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. Use a slow injection speed until material passes through the gate. Melt Temperature: Preferred range 180-195 C (~356-~383 F). Melt temperature should never exceed 230 C (450 F). Mold Surface Temperature: Preferred range 80-105 C 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. 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.
Injection molding Preprocessing	Drying is recommended for low gloss grades of Celcon® and Hostaform® acetal copolymers. 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%
Injection molding 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.

Other Approvals

Other Approvals

OEM	Specification	Additional Information
Stellantis - Chrysler	CPN 4109	100% color match
Ford	WSK-M4D840-A5	
GM	GMN7831P-POM-042	Natural & Black
Honda		Color approved
Nissan		Color approved
Toyota		Color approved