Celanese
The chemistry inside innovation™

CELCON® M270 ECO-C 872

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Celcon® acetal copolymer grade M270 ECO-C 872 is a lower molecular weight, high - flow grade designed for superior moldability in multi-cavity, intricate or hard to fill molds applications. Chemical abbreviation according to ISO 1043-1: POM
Please also see Hostaform® C 27021.
ECO-C: Celcon® M270 ECO-C 872 incorporates circular content derived from captured carbon dioxide emissions in the finished product through mass balance allocation. The product is a drop-in replacement to the standard grade with the same performance and processing properties and contributes to the displacement of virgin fossil fuel resources. The feedstock utilizing captured carbon dioxide emissions is ISCC CFC certified as low carbon intensity methanol.

产品信息

树脂鉴别	POM		ISO 1043
制品标识码	>POM<		ISO 11469

流变性能

熔体体积流动速度	23	cm^3/10min	ISO 1133
温度	190	°C	
负荷	2.16	kg	
模塑收缩率, 平行	1.7	%	ISO 294-4, 2577
模塑收缩率, 垂直	1.6	%	ISO 294-4, 2577

机械性能

拉伸模量	2800	MPa	ISO 527-1/-2
拉伸屈服应力, 50mm/min	67	MPa	ISO 527-1/-2
屈服伸长率, 50mm/min	8	%	ISO 527-1/-2
弯曲模量	2750	MPa	ISO 178
3.5%应变时的弯曲应力	76	MPa	ISO 178
1%形变时的压缩应力	31	MPa	ISO 604
拉伸蠕变模量, 1h	2300	MPa	ISO 899-1
拉伸蠕变模量, 1000h	1300	MPa	ISO 899-1
简支梁无缺口冲击强度, 23°C	116	kJ/m^2	ISO 179/1eU
简支梁无缺口冲击强度, -30°C	108	kJ/m^2	ISO 179/1eU
简支梁缺口冲击强度, 23°C	5.2	kJ/m^2	ISO 179/1eA
悬臂梁缺口冲击强度, 23°C	5.4	kJ/m^2	ISO 180/1A
悬臂梁缺口冲击强度, -30°C	5.0	kJ/m^2	ISO 180/1A

热性能

熔融温度, 10°C/min	166	°C	ISO 11357-1/-3
热变形温度, 1.8 MPa	103	°C	ISO 75-1/-2
热变形温度, 0.45 MPa	156	°C	ISO 75-1/-2
线性热膨胀系数, 平行	110	E-6/K	ISO 11359-1/-2
线性热膨胀系数, 垂直	120	E-6/K	ISO 11359-1/-2
熔体导热系数	0.155	W/(m K)	ISO 22007-2
熔体比热容	2210	J/(kg K)	ISO 22007-4

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其它性能

吸湿率, 2mm	0.2	%	类似ISO 62
吸水率, 2mm	0.75	%	类似ISO 62
吸水率, 浸泡 24小时	0.22	%	类似ISO 62
密度	1410	kg/m³	ISO 1183

注塑

建议干燥	否	
干燥温度	100	°C
干燥时间，除湿干燥机	3 - 4	h
加工前水分含量	≤ 0.2	%
最优熔体温度	185	°C
最低熔体温度***	180	°C
最高熔体温度	190	°C
螺杆最大切线速度	≤ 0.3	m/s
最优模具温度	100	°C
最低模具温度	80	°C
最高模具温度	120	°C
保压范围	60 - 120	MPa
保压时间 (h表示部件的最大壁厚mm)	2h²-3	s
背压	4	MPa
顶出温度	130	°C

汽车

OEM	STANDARD	ADDITIONAL INFORMATION
Continental	TST N 055 54.12	
Ford	WSK-M4D635-A3	Natural & Black
Li Auto	Q/LiA5310020	2021 (V2)
Nissan	POM-IC3-1	

特性

加工方法	注塑
添加剂	脱模助剂
特殊性能	高流动性
可持续	碳捕集

其他信息

注塑

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.

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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.

加工注意事项

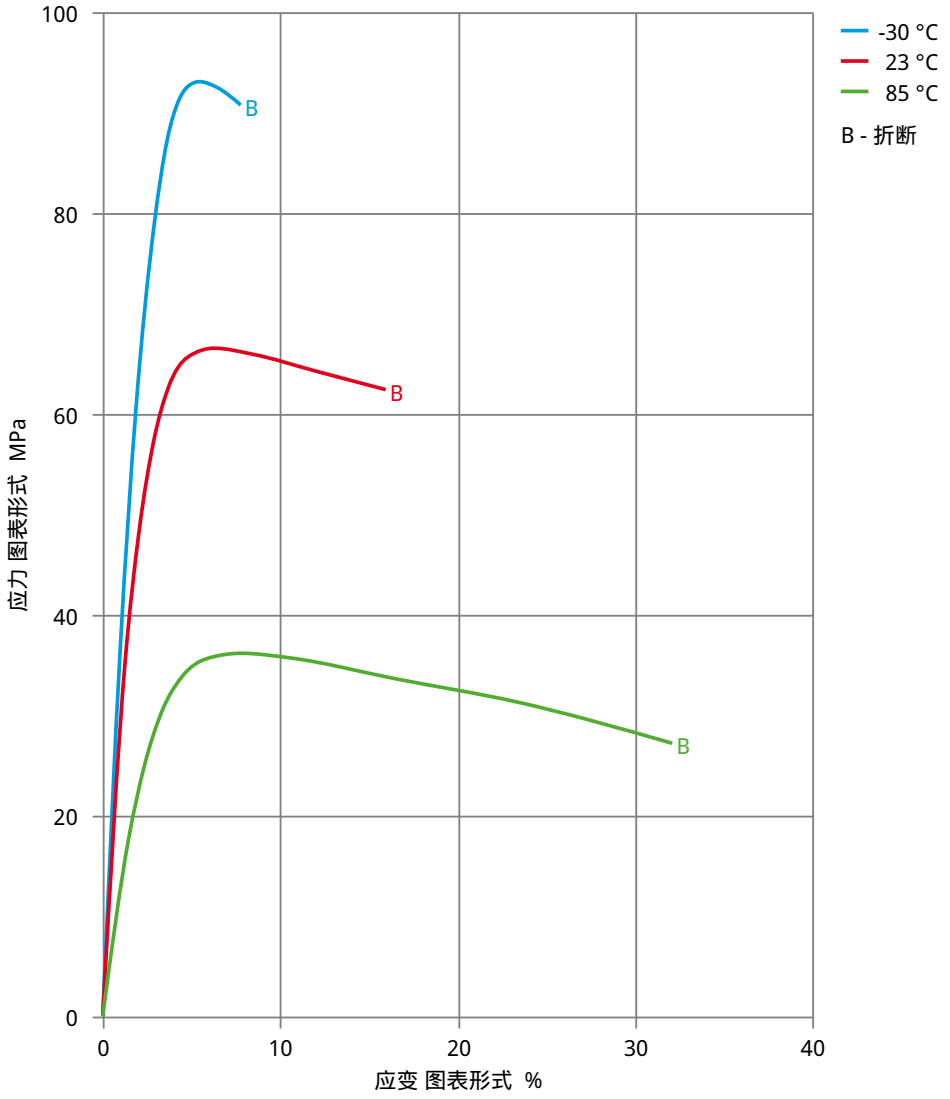
Pre-Drying

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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应力 - 应变

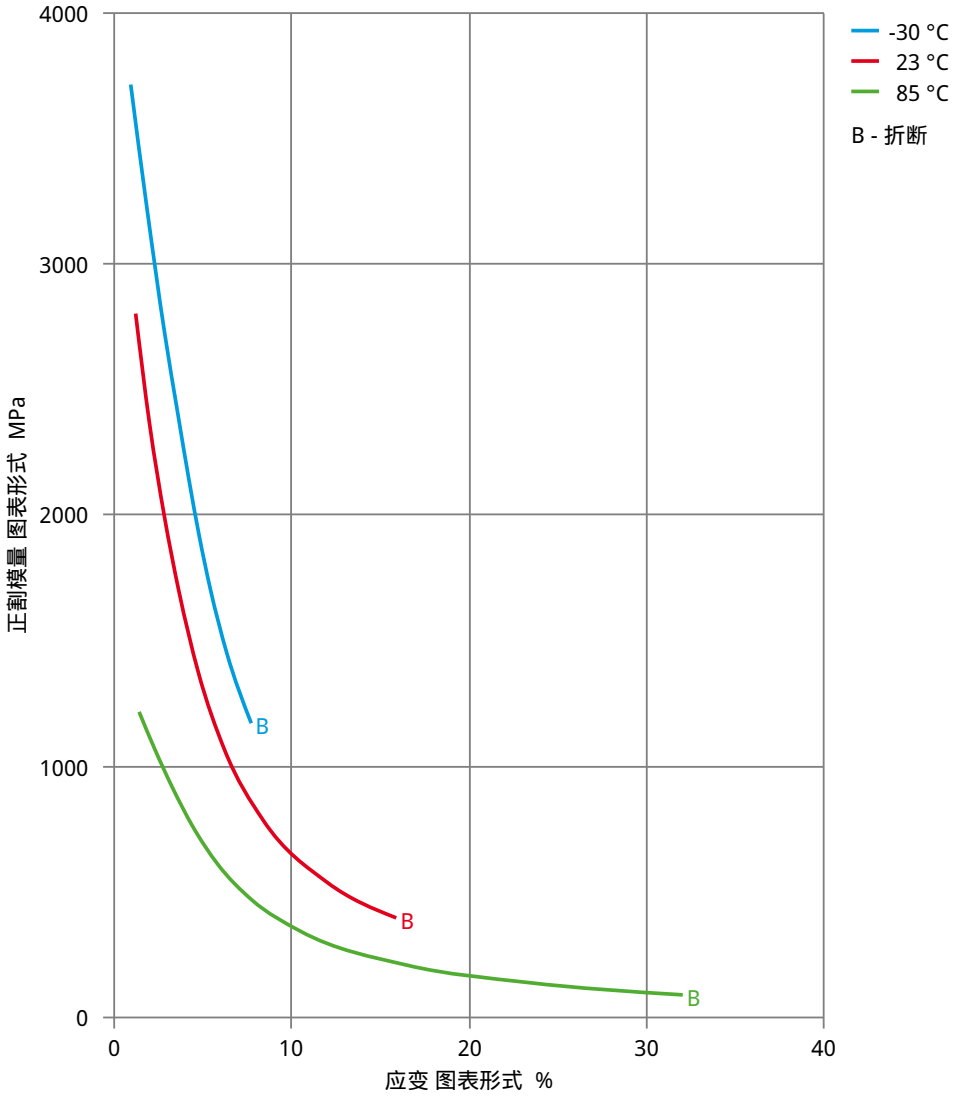


Revised: 2025-07-24 Source: Celanese Materials Database

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正割模量 - 应变



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