



## CYCOLAC™ Resin EX58F

### Americas: COMMERCIAL

High impact ABS for sheet extrusion and blow molding applications. FDA food contact compliant.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	390	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	300	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	3.1	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	32	%	ASTM D 638
Tensile Modulus, 5 mm/min	21200	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	670	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	22000	kgf/cm <sup>2</sup>	ASTM D 790
Hardness, Rockwell R	102	-	ASTM D 785
Tensile Stress, yield, 50 mm/min	41	MPa	ISO 527
Tensile Stress, break, 50 mm/min	30	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	2.6	%	ISO 527
Tensile Strain, break, 50 mm/min	21	%	ISO 527
Tensile Modulus, 1 mm/min	1970	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	60	MPa	ISO 178
Flexural Modulus, 2 mm/min	2000	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	44	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	30	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	377	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	35	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	23	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	37	kJ/m <sup>2</sup>	ISO 179/1eA

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(2) Only typical data for selection purposes. Not to be used for part or tool design.  
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	106	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	91	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	76	°C	ASTM D 648
CTE, -40°C to 40°C, flow	1.01E-04	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	1.04E-04	1/°C	ASTM E 831
Vicat Softening Temp, Rate B/50	95	°C	ISO 306
Vicat Softening Temp, Rate B/120	97	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	78	°C	ISO 75/Af
Relative Temp Index, Elec	60	°C	UL 746B
Relative Temp Index, Mech w/impact	60	°C	UL 746B
Relative Temp Index, Mech w/o impact	60	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.03	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.6 - 0.8	%	SABIC Method
Melt Viscosity, 240°C, 100 sec-1	15500	poise	ASTM D 3825
Density	1.03	g/cm³	ISO 1183
Melt Flow Rate, 220°C/10.0 kg	4	g/10 min	ISO 1133
<b>ELECTRICAL</b>			
Arc Resistance, Tungsten {PLC}	5	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	4	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	1	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94HB Flame Class Rating (3)	1.5	mm	UL 94

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- Recommend initial lower temperatures settings to avoid material degradation/hang-up in die.
- Maintain melt temperature within processing range.

PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Extrusion Blow Molding</b>		
Drying Temperature	80 - 90	°C
Drying Time	4 - 5	hrs
Drying Time (Cumulative)	24	hrs
Maximum Moisture Content	0.02	%
Melt Temperature (Parison)	215 - 230	°C
Barrel - Zone 1 Temperature	205 - 225	°C
Barrel - Zone 2 Temperature	205 - 225	°C
Barrel - Zone 3 Temperature	205 - 225	°C
Barrel - Zone 4 Temperature	205 - 225	°C
Adapter - Zone 5 Temperature	210 - 230	°C
Head - Zone 6 - Top Temperature	215 - 230	°C
Head - Zone 7 - Bottom Temperature	215 - 230	°C
Screw Speed	20 - 60	rpm
Extruder Feed Zone Temperature	60 - 75	°C
Mold Temperature	40 - 80	°C
Die Temperature	215 - 235	°C
<b>Sheet Extrusion</b>		
Drying Temperature	80 - 95	°C
Drying Time	4	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	215 - 260	°C
Barrel - Zone 1 Temperature	170 - 200	°C
Barrel - Zone 2 Temperature	180 - 220	°C
Barrel - Zone 3 Temperature	190 - 225	°C
Barrel - Zone 4 Temperature	200 - 240	°C
Adapter Temperature	205 - 250	°C
Die Temperature	205 - 250	°C
Roll Stack Temp - Top	90 - 95	°C

- Purge material from extruder prior to shutdown.
- For extended downtime, lower barrel, head and die temperatures to 95°C (200°F).

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Sheet Extrusion</b>		
Roll Stack Temp - Middle	95 - 105	°C
Roll Stack Temp - Bottom	100 - 105	°C

- Purge material from extruder prior to shutdown.
- For extended downtime, lower barrel, head and die temperatures to 95°C (200°F).

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