

CYCOLAC™ EX58F resin

Acrylonitrile Butadiene Styrene

SABIC Innovative Plastics

Message:

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

General Information	
Features	Impact resistance, high
	Compliance of Food Exposure
Uses	Blow molding applications
	Sheet
Agency Ratings	FDA Food Exposure, Not Rated
Processing Method	Extrusion blow molding
	Sheet extrusion molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.03	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (220°C/10.0 kg)	4.0	g/10 min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.60 - 0.80	%	Internal method
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	102		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2080	MPa	ASTM D638
--	1970	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	39.0	MPa	ASTM D638
Yield	41.0	MPa	ISO 527-2/50
Fracture ³	30.0	MPa	ASTM D638
Fracture	30.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	3.1	%	ASTM D638
Yield	2.6	%	ISO 527-2/50
Fracture ⁵	32	%	ASTM D638
Fracture	21	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2160	MPa	ASTM D790

-- ⁷	2000	MPa	ISO 178
Flexural Stress			
--	60.0	MPa	ISO 178
Yield, 50.0mm span ⁸	66.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	37	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	300	J/m	ASTM D256
23°C	430	J/m	ASTM D256
-30°C ¹⁰	23	kJ/m ²	ISO 180/1A
23°C ¹¹	35	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	37.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	91.0	°C	ASTM D648
1.8 MPa, unannealed, 3.20mm	76.0	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹²	78.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	106	°C	ASTM D1525 ¹³
--	95.0	°C	ISO 306/B50
--	97.0	°C	ISO 306/B120
Linear thermal expansion coefficient			
Flow: -40 to 40°C	1.0E-4	cm/cm/°C	ASTM E831
Lateral: -40 to 40°C	1.0E-4	cm/cm/°C	ASTM E831
RTI Elec	60.0	°C	UL 746
RTI Imp	60.0	°C	UL 746
RTI	60.0	°C	UL 746
Electrical	Nominal Value		Test Method
Arc Resistance ¹⁴	PLC 5		ASTM D495
Comparative Tracking Index (CTI)	PLC 0		UL 746
High Amp Arc Ignition (HAI)	PLC 4		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 1		UL 746
Hot-wire Ignition (HWI)	PLC 4		UL 746
Flammability	Nominal Value		Test Method
Flame Rating (1.50 mm)	HB		UL 94
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (240°C, 100 sec ⁻¹)	1550	Pa · s	ASTM D3835
Extrusion instructions			

Extrusion Blow Molding Parameters:

Adapter - Zone 5 Temperature: 210 - 232 C

Barrel - Zone 1 Temperature: 204 - 227 C

Barrel - Zone 2 Temperature: 204 - 227 C

Barrel - Zone 3 Temperature: 204 - 227 C

Barrel - Zone 4 Temperature: 204 - 227 C

Die Temperature: 215 - 235 C

Drying Temperature: 82 - 88 C

Drying Time: 4 - 5 hrs

Drying Time (Cumulative): 24 hrs

Extruder Feed Zone Temperature: 60 - 77 C

Head - Zone 6 - Top Temperature: 215 - 232 C

Head - Zone 7 - Bottom Temperature: 215 - 232 C

Maximum Moisture Content: .02 %

Melt Temperature (Parison): 215 - 232 C

Mold Temperature: 38 - 82 C

Screw Speed: 20 - 60 rpm

Sheet Extrusion Parameters:

Adapter Temperature: 204 - 249 C

Barrel - Zone 1 Temperature: 171 - 199 C

Barrel - Zone 2 Temperature: 182 - 221 C

Barrel - Zone 3 Temperature: 188 - 227 C

Barrel - Zone 4 Temperature: 199 - 238 C

Die Temperature: 204 - 249 C

Drying Temperature: 82 - 93 C

Drying Time: 4 hrs

Maximum Moisture Content: .02 %

Melt Temperature: 215 - 260 C

Roll Stack Temp - Bottom: 99 - 104 C

Roll Stack Temp - Middle: 93 - 104 C

Roll Stack Temp - Top: 88 - 93 C

NOTE

1.	5.0 mm/min
2.	Type 1, 5.0 mm/min
3.	Type 1, 5.0 mm/min
4.	Type 1, 5.0 mm/min
5.	Type 1, 5.0 mm/min
6.	1.3 mm/min
7.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*4 sp=62mm
10.	80*10*4
11.	80*10*4
12.	80*10*4 mm
13.	标准 B (120°C/h), 载荷2 (50N)
14.	Tungsten electrode

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

