

CYCOLAC™ EX58 resin

Acrylonitrile Butadiene Styrene

SABIC Innovative Plastics

Message:

High impact ABS for sheet extrusion and blow molding applications.

General Information		
UL YellowCard	E121562-220683	E121562-220684
Features	Impact resistance, high	
Uses	Blow molding applications	
	Sheet	
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: 216 - 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: 216 - 232 C

Head - Zone 7 - Bottom Temperature: 216 - 232 C

Maximum Moisture Content: .02 %

Melt Temperature (Parison): 216 - 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: 216 - 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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