

CYCOLAC* G320 Resin

SABIC Innovative Plastics Europe - Acrylonitrile Butadiene Styrene

General Information			
Product Description			
CYCOLAC G320 is a super high impact resistant ABS grade. It combines impact resistance with high stiffness, good temperature resistance and processability. It has a good fit in automotive interiors where impact resistance is the main criteria			
General			
Features	• Good Processability	• High Stiffness	• Ultra High Impact Resistance
Uses	• Automotive Interior Parts		
RoHS Compliance	• RoHS Compliant		
Forms	• Pellets		
Processing Method	• Injection Molding		
ASTM and ISO Properties ¹			
Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.05 g/cm³	1.05 g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (220°C/10.0 kg)	7.0 g/10 min	7.0 g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (220°C/10.0 kg)	0.427 in³/10min	7.00 cm³/10min	ISO 1133
Molding Shrinkage (Flow)	0.0050 to 0.0070 in/in	0.50 to 0.70 %	ASTM D955
Water Absorption			ISO 62
73 °F (23 °C), Saturation	1.0 %	1.0 %	
73 °F (23 °C), Equilibrium, 50 % RH	0.20 %	0.20 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	334000 psi	2300 MPa	ISO 527-2/1
Tensile Stress			
Yield	5800 psi	40.0 MPa	ISO 527-2/5
Yield	6530 psi	45.0 MPa	ISO 527-2/50
Break	5080 psi	35.0 MPa	ISO 527-2/5
Break	5080 psi	35.0 MPa	ISO 527-2/50
Tensile Strain			
Yield	2.0 %	2.0 %	ISO 527-2/5
Yield	3.0 %	3.0 %	ISO 527-2/50
Break	10 %	10 %	ISO 527-2/5
Break	15 %	15 %	ISO 527-2/50
Flexural Modulus ²	334000 psi	2300 MPa	ISO 178
Flexural Strength ^{2, 3}	9140 psi	63.0 MPa	ISO 178
Taber Abrasion Resistance ⁴ (1000 Cycles)	90.0 mg	90.0 mg	ASTM D1044
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22 °F (-30 °C)	5.71 ft·lb/in²	12.0 kJ/m²	
73 °F (23 °C)	18.1 ft·lb/in²	38.0 kJ/m²	
Notched Izod Impact Strength			ISO 180/1A
-22 °F (-30 °C)	5.71 ft·lb/in²	12.0 kJ/m²	
73 °F (23 °C)	19.0 ft·lb/in²	40.0 kJ/m²	

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Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (R-Scale)	109	109	ISO 2039-2
Ball Indentation Hardness - H 358/30	11600 psi	80.0 MPa	ISO 2039-1
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Heat Deflection Temperature ⁵			
66 psi (0.45 MPa), Unannealed	192 °F	89.0 °C	ISO 75-2/Be
264 psi (1.8 MPa), Unannealed	171 °F	77.0 °C	ISO 75-2/Ae
Vicat Softening Temperature			
--	199 °F	93.0 °C	ISO 306/B50
--	203 °F	95.0 °C	ISO 306/B120
CLTE			ISO 11359-2
Flow, 73 to 140 °F (23 to 60 °C)	0.000044 in/in/°F	0.000080 cm/cm/°C	
Transverse, 73 to 140 °F (23 to 60 °C)	0.000044 in/in/°F	0.000080 cm/cm/°C	
Thermal Conductivity	1.4 Btu·in/hr/ft²/°F	0.20 W/m/K	ISO 8302
Ball Pressure Test, 167 °F (75 °C)	Pass	Pass	IEC 60695-10-2
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	> 1.0E+15 ohms	> 1.0E+15 ohms	IEC 60093
Volume Resistivity	> 1.0E+15 ohm·cm	> 1.0E+15 ohm·cm	IEC 60093
Relative Permittivity			IEC 60250
50 Hz	2.90	2.90	
60 Hz	2.90	2.90	
1E+6 Hz	2.60	2.60	
Dissipation Factor			IEC 60250
50 Hz	0.00800	0.00800	
60 Hz	0.00800	0.00800	
1E+6 Hz	0.00900	0.00900	
Electric Strength			IEC 60243-1
0.126 in (3.20 mm), in Oil	431.80 V/mil	17.00 kV/mm	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Burning Rate (0.0394 in (1.00 mm))	0.98 in/min	25 mm/min	ISO 3795
Flame Rating - UL			UL 94
0.125 in (3.17 mm), Testing by SABIC	HB	HB	
Glow Wire Flammability Index			IEC 60695-2-12
0.0394 in (1.000 mm)	1200 °F	650 °C	
Processing Information			
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	185 to 203 °F	85.0 to 95.0 °C	
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr	
Suggested Max Moisture	0.10 %	0.10 %	
Hopper Temperature	140 to 176 °F	60.0 to 80.0 °C	
Rear Temperature	410 to 482 °F	210 to 250 °C	
Middle Temperature	410 to 482 °F	210 to 250 °C	
Front Temperature	446 to 518 °F	230 to 270 °C	
Nozzle Temperature	428 to 500 °F	220 to 260 °C	
Processing (Melt) Temp	464 to 518 °F	240 to 270 °C	
Mold Temperature	104 to 176 °F	40.0 to 80.0 °C	