

Technical Data Sheet

Duragrip DGR 6170BK

Thermoplastic Elastomer
LyondellBasell Industries
Engineering Plastics

Product Description

DuraGrip® 6170BK is designed to be a special purpose Melt Processible Elastomer (MPE) that is easy to use in injection molding and extrusion processes. DGR 6170BK has an excellent soft touch feel and will Bond to Nylon, ABS, PC, PC/ABS. DuraGrip® 6100 series is hygroscopic and requires drying prior to use.

General

Features	• Good Adhesion
Agency Ratings	• EU 2002/96/EC (WEEE)
RoHS Compliance	• RoHS Compliant
Forms	• Pellets
Processing Method	• Extrusion • Injection Molding

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density / Specific Gravity			
--	1.10	1.10 g/cm ³	ASTM D792
--	1.10 g/cm ³	1.10 g/cm ³	ISO 1183

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Taber Abrasion Resistance 1000 Cycles, 1.0e+6 G, Cs-17 Wheel	87.0 mg	87.0 mg	ASTM D1044

Elastomers	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Set (100% Strain)	5 %	5 %	ASTM D412
Tensile Stress			
100% Strain	400 psi	2.76 MPa	ASTM D412
100% Strain, 73°f (23°c)	400 psi	2.76 MPa	ISO 37
Tensile Strength (Yield, 73°f (23°c))	1340 psi	9.24 MPa	ASTM D412 ISO 37
Tensile Elongation			
Break	420 %	420 %	ASTM D412
Break, 73°f (23°c)	420 %	420 %	ISO 37
Tear Strength ¹ (75°f (24°c))	211 lbf/in	37.0 kN/m	ASTM D624
Compression Set			ASTM D395B ISO 815
75°f (24°c), 22 Hr	21 %	21 %	
158°f (70°c), 22 Hr	82 %	82 %	
212°f (100°c), 22 Hr	95 %	95 %	

Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Durometer Hardness (Shore A, 5 Sec)	65	65	ASTM D2240 ISO 868

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Brittleness Temperature	-90.0 °F	-67.8 °C	ASTM D746 ISO 812

Technical Data Sheet

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Aging	Nominal Value (English)	Nominal Value (SI)	Test Method
Change in Tensile Strength in Air			
158°F (70°C), 168 Hr	34 %	34 %	ASTM D573 ISO 188
100% Strain, 158°F (70°C), 168 Hr	5.0 %	5.0 %	ASTM D573
212°F (100°C), 168 Hr	41 %	41 %	ASTM D573 ISO 188
100% Strain, 212°F (100°C), 168 Hr	-3.0 %	-3.0 %	ASTM D573
100% Strain 158°F (70°C), 168 Hr	5.0 %	5.0 %	ISO 188
100% Strain 212°F (100°C), 168 Hr	-3.0 %	-3.0 %	ISO 188
Change in Ultimate Elongation in Air			
158°F (70°C), 168 Hr	8.0 %	8.0 %	ASTM D573
212°F (100°C), 168 Hr	18 %	18 %	
Change in Tensile Strain at Break			
158°F (70°C), 168 Hr	8.0 %	8.0 %	ISO 1817
212°F (100°C), 168 Hr	18 %	18 %	
Change in Volume			
75°F (24°C), 168 Hr, In Reference Fuel B	49 %	49 %	ASTM D471 ISO 1817
158°F (70°C), 168 Hr, In Astm #1 Oil	5.0 %	5.0 %	
158°F (70°C), 168 Hr, In Irm 903 Oil	42 %	42 %	
158°F (70°C), 168 Hr, In Water	1.0 %	1.0 %	
Fill Analysis	Nominal Value (English)	Nominal Value (SI)	Test Method
Melt Viscosity (374°F (190°C), 300 Sec ⁻¹)	420 Pa·s	420 Pa·s	ASTM D3835

Additional Information

The value listed as Density -Specific Gravity, ASTM D792, was tested in accordance with ASTM D471.

The value listed as Density, ISO 1183, was tested in accordance with ISO 2781.

Technical Data Sheet

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Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	150 °F	66 °C
Drying Time	3.0 hr	3.0 hr
Rear Temperature	400 to 430 °F	204 to 221 °C
Middle Temperature	420 to 440 °F	216 to 227 °C
Front Temperature	440 to 460 °F	227 to 238 °C
Nozzle Temperature	440 to 480 °F	227 to 249 °C
Processing (Melt) Temp	440 to 490 °F	227 to 254 °C
Mold Temperature	110 to 130 °F	43 to 54 °C
Injection Pressure	400 to 800 psi	2.76 to 5.52 MPa
Screw Speed	50 to 150 rpm	50 to 150 rpm

Injection Notes

DuraGrip® is not hygroscopic, under normal conditions does not require drying. Dry in a desiccant dryer if porosity is observed.
 Injection Speed: 1 to 3 in³/sec
 Injection Time (1st Stage/Boost): 0.5 to 4 sec
 Second Stage Pressure: 300 to 500 psi
 Second Stage Time: 3 to 10 sec
 Cooling Time: 10 to 25 sec
 Back Pressure: 25 to 75 %