Technical Data Sheet

DuraGrip® DGR 6060NC

Thermoplastic Elastomer
Engineering Plastics

Product Description

DuraGrip® DGR 6060NC is designed to be a general purpose Thermoplastic Elastomer (TPE) that is easy to use in injection molding and extrusion processes. DGR 6060NC has an excellent soft touch feel, will bond to olefinics, is easy to color, and is available in FDA compliant formulations. DuraGrip® is not hygroscopic and under normal conditions does not require drying.

General

Features	• General Purpose	• Good Colorability
Agency Ratings	• EU 2002/96/EC (WEEE)	• FDA Unspecified Rating
RoHS Compliance	• RoHS Compliant	
Forms	• Pellets	
Processing Method	• Extrusion	• Injection Molding

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density / Specific Gravity			
--	0.990	0.988 g/cm³	ASTM D792
--	0.988 g/cm³	0.988 g/cm³	ISO 1183
Molding Shrinkage			
Flow : 0.0625 in (1.59 mm)	0.022 in/in	2.2 %	ASTM D955
Flow : 0.125 in (3.18 mm)	0.013 in/in	1.3 %	ASTM D955
Across Flow : 0.0625 in (1.59 mm)	0.015 in/in	1.5 %	ASTM D955
Across Flow : 0.125 in (3.18 mm)	0.010 in/in	1.0 %	ASTM D955
Across Flow : 0.0625 in (1.59 mm)	1.5 %	1.5 %	ISO 294-4
Flow : 0.0625 in (1.59 mm)	2.2 %	2.2 %	ISO 294-4
Across Flow : 0.125 in (3.18 mm)	1.0 %	1.0 %	ISO 294-4
Flow : 0.125 in (3.18 mm)	1.3 %	1.3 %	ISO 294-4
Mechanical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Taber Abrasion Resistance			ASTM D1044
1000 Cycles, 1.0E+6 g, CS-17 Wheel	30.0 mg	30.0 mg	
Elastomers	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Tensile Set (100% Strain)	11 %	11 %	ASTM D412
Tensile Stress			
100% Strain	318 psi	2.19 MPa	ASTM D412
100% Strain, 73°F (23°C)	318 psi	2.19 MPa	ISO 37
Tensile Strength (Yield, 73°F (23°C))	1080 psi	7.42 MPa	ASTM D412 ISO 37
Tensile Elongation			
Break	380 %	380 %	ASTM D412
Break, 73°F (23°C)	380 %	380 %	ISO 37
Tear Strength [1] (75°F (24°C))	132 lbf/in	23.1 kN/m	ASTM D624
Compression Set			ASTM D395B ISO 815
75°F (24°C), 22 hr	23 %	23 %	
158°F (70°C), 22 hr	43 %	43 %	
212°F (100°C), 22 hr	71 %	71 %	
Hardness	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Durometer Hardness (Shore A, 5 sec)	63	63	ASTM D2240 ISO 868
Thermal	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Brittleness Temperature	-89.0 °F	-67.2 °C	ASTM D746 ISO 812

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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	-12 %	-12 %	ASTM D573 ISO 188
100% Strain, 158°F (70°C), 168 hr	-1.0 %	-1.0 %	ASTM D573
212°F (100°C), 168 hr	-7.0 %	-7.0 %	ASTM D573 ISO 188
100% Strain, 212°F (100°C), 168 hr	5.0 %	5.0 %	ASTM D573
100% Strain 158°F (70°C), 168 hr	-1.0 %	-1.0 %	ISO 188
100% Strain 212°F (100°C), 168 hr	5.0 %	5.0 %	ISO 188
Change in Ultimate Elongation in Air			ASTM D573
158°F (70°C), 168 hr	-2.0 %	-2.0 %	
212°F (100°C), 168 hr	0.0 %	0.0 %	
Change in Tensile Strain at Break			ISO 1817
158°F (70°C), 168 hr	-2.0 %	-2.0 %	
212°F (100°C), 168 hr	0.0 %	0.0 %	
Change in Volume			ASTM D471 ISO 1817
75°F (24°C), 168 hr, in Reference Fuel B	9.0 %	9.0 %	
212°F (100°C), 168 hr, in ASTM #1 Oil	2.0 %	2.0 %	
212°F (100°C), 168 hr, in IRM 903 Oil	39 %	39 %	
212°F (100°C), 168 hr, in Water	-13 %	-13 %	

Fill Analysis	Nominal Value (English)	Nominal Value (SI)	Test Method
Melt Viscosity (374°F (190°C), 300 sec^-1)	107 Pa·s	107 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.

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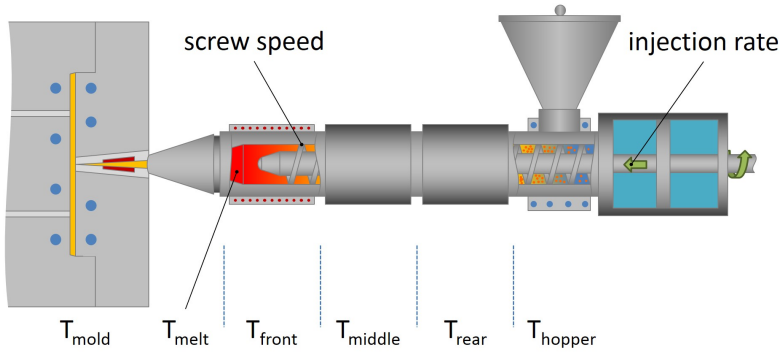

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	150 °F	66 °C
Drying Time	3.0 hr	3.0 hr
Suggested Max Regrind	25 %	25 %
Rear Temperature	370 to 390 °F	188 to 199 °C
Middle Temperature	390 to 410 °F	199 to 210 °C
Front Temperature	420 to 440 °F	216 to 227 °C
Nozzle Temperature	400 to 430 °F	204 to 221 °C
Processing (Melt) Temp	390 to 430 °F	199 to 221 °C
Mold Temperature	110 to 130 °F	43 to 54 °C
Injection Pressure	150 to 600 psi	1.03 to 4.14 MPa
Screw Speed	25 to 100 rpm	25 to 100 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: 150 to 300 psi
Second Stage Time: 3 to 10 sec
Cooling Time: 10 to 20 sec
Back Pressure: 20 to 75 %