



Product Data

DuraGrip<sup>®</sup> TPE

Thermoplastic Elastomer

DuraGrip<sup>®</sup> DGR 6050NC

DuraGrip<sup>®</sup> DGR 6050NC is designed to be a general purpose Thermoplastic Elastomer (TPE) that is easy to use in injection molding and extrusion processes. DGR 6050NC has an excellent soft touch feel, will bond to olefinics, is easy to color, and is available in FDA compliant formulations. DuraGrip<sup>®</sup> is not hygroscopic and under normal conditions does not require drying.

Property	ASTM	ISO	Units English / Metric	
<b>Mechanical</b>				
Specific Gravity	D471	2781		.99
Hardness, 5 Sec	D2240	48	Shore A	49
<b>Stress Strain Properties at 23°C</b>				
100% Modulus			Psi (Mpa)	298 (2.1)
Tensile Strength			Psi (Mpa)	859 (6.1)
Elongation At Break			%	448
<b>% Retained After 7 Days @ 70°C</b>				
100% Modulus	D412	37	%	97
Tensile Strength			%	93
Elongation At Break			%	104
<b>% Retained After 7 Days @ 100°C</b>				
100% Modulus	D412	37	%	104
Tensile Strength			%	98
Elongation At Break			%	105
<b>Tear Strength, Graves (Die C) at 75°F (24°C)</b>	D624		lb/in (KN/m)	119 (24.8)
<b>Permanent Set (100% Tension)</b>	D412		%	9
<b>Compression Set, Method B</b>				
After 22 Hours At 75°F (24°C)	D395	815	%	19
After 22 Hours At 158°F (70°C)			%	41
After 22 Hours At 212°F (100°C)			%	68
<b>Low Temperature Properties, Brittleness</b>	D746	812	°F (°C)	-90 (-68)
<b>Tabor Abrasion, CS-17 Wheel, 1000g</b>	D3389		Grams per 1000 cycles	0.07

<b>Fluid Resistance - Volume Change</b>	D471	1817		
After 7 Days in Water At 212°F (100°C)			%	-12
After 7 Days in ASTM #1 Oil At 212°F (100°C)			%	3
After 7 Days in IRM 903 Oil At 212°F (100°C)			%	45
After 7 Days in ASTM Ref. Fuel B At 75°F (24°C)			%	22
<b>Rheological</b>				
Viscosity At 300 s-1 At 374°F (190°C)	D3835		Pa-sec	109
Typical Processing Temperature			°F (°C)	400 (204)

**Drying**

DuraGrip® is not hygroscopic, under normal conditions does not require drying. If porosity is observed, dry the material in a desiccant dryer for 3 hours at 150°F (66°C).

**Coloring**

DuraGrip® can be colored using masterbatch with a polyethylene (PE) or polypropylene (PP) carrier. For more detailed information, please refer to the Coloring Tech Note.

**Recycling**

Regrind is possible up to 25% without the loss of significant physical properties.

**Purging**

Purge with a low density polyethylene (LDPE) or propylene after use. If the molding machine is idle for greater than 30 minutes, purge thoroughly.

**Typical Injection Molding Parameters**

Injection Pressure	150 – 500
Injection Speed	1 - 3 cu. in. /sec.
Injection Time (boost)	0.5 - 2 sec.
Second Stage Pressure	150 - 300 psi
Second Stage Time	3 - 10 sec.
Cooling Time	10 - 20 sec.
Screw Speed	25 - 100 rpm
Back Pressure	20 - 50%
Mold Temperature	110° F

**Temperature Profiles**

Rear	370°F - 390°F (190°C - 199°C)
Middle	390°F - 410°F (199°C - 210°C)
Front	420°F - 440°F (215°C - 226°C)
Nozzle	400°F - 430°F (204°C - 220°C)
Melt	390°F - 430°F (199°C - 220°C)
Mold	110°F - 130°F (43°C - 55°C)

**Shrinkage**

<b>Mold Shrinkage, % (in./in.)</b>	<b>THICKNESS</b>	
	<b>1/16" (0.0625")</b>	<b>1/8" (0.125")</b>
Machine Direction (MD)	2.8 % (.028 in./in.)	1.3 % (.013 in./in.)
Cross Machine Direction (CMD)	1.4 % (.014 in./in.)	1.0 % (.010 in./in.)

**For more information on DuraGrip:**

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