

DuraGrip® DGR 6040NC

Thermoplastic Elastomer

Advanced Polymer Alloys

Message:

DuraGrip® DGR 6040 NC is designed to be a general purpose Thermoplastic Elastomer (TPE) that is easy to use in injection molding and extrusion processes. DGR 6040NC has an excellent soft touch feel, will bond to olefinics, and is available in FDA compliant formulations. DuraGrip® is not hygroscopic and under normal conditions does not require drying.

General Information	
Features	General
Agency Ratings	EU 2002/96/EC (WEEE) FDA not rated
RoHS Compliance	RoHS compliance
Forms	Particle
Processing Method	Extrusion Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.988	g/cm ³	ASTM D792, ISO 1183
Molding Shrinkage			
Flow: 1.59mm	2.9	%	ASTM D955
Flow: 3.18mm	1.7	%	ASTM D955
Transverse flow: 1.59mm	1.3	%	ASTM D955
Transverse flow: 3.18mm	1.2	%	ASTM D955
Vertical flow direction: 1.59mm	1.3	%	ISO 294-4
Flow direction: 1.59mm	2.9	%	ISO 294-4
Vertical flow direction: 3.18mm	1.2	%	ISO 294-4
Flow direction: 3.18mm	1.7	%	ISO 294-4

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A, 5 sec)	42		ASTM D2240, ISO 868

Mechanical	Nominal Value	Unit	Test Method
Taber Abrasion Resistance (1000 Cycles, 1.0E 6g, CS-17 wheel)	120	mg	ASTM D1044

Elastomers	Nominal Value	Unit	Test Method
Tensile Set (100% Strain)	7	%	ASTM D412
Tensile Stress			
100% strain	1.24	MPa	ASTM D412
100% strain, 23°C	1.24	MPa	ISO 37
Tensile Strength (Yield, 23°C)	5.18	MPa	ASTM D412, ISO 37
Tensile Elongation			

Fracture	450	%	ASTM D412
Fracture, 23°C	450	%	ISO 37
Tear Strength ¹ (24°C)	15.2	kN/m	ASTM D624
Compression Set			ASTM D395B, ISO 815
24°C, 22 hr	14	%	ASTM D395B, ISO 815
70°C, 22 hr	34	%	ASTM D395B, ISO 815
100°C, 22 hr	62	%	ASTM D395B, ISO 815
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air			
70°C, 168 hr	-6.0	%	ASTM D573, ISO 188
100% strain, 70°C, 168 hr	-6.0	%	ASTM D573
100°C, 168 hr	-11	%	ASTM D573, ISO 188
100% strain, 100°C, 168 hr	-4.0	%	ASTM D573
100% strain 70°C, 168 hr	-6.0	%	ISO 188
100% strain 100°C, 168 hr	-4.0	%	ISO 188
Change in Ultimate Elongation in Air			
			ASTM D573
70°C, 168 hr	4.0	%	ASTM D573
100°C, 168 hr	1.0	%	ASTM D573
Change in Tensile Strain at Break			
			ISO 1817
70°C, 168 hr	4.0	%	ISO 1817
100°C, 168 hr	1.0	%	ISO 1817
Change in Volume			
24°C, 168 hr, in reference fuel B	15	%	ASTM D471
100°C, 168 hr, ASTM Standard Oil (No.1)	4.0	%	ASTM D471
100°C, 168 hr, in IRM 903 oil	45	%	ASTM D471
100°C, 168 hr, in water	-10	%	ASTM D471, ISO 1817
24°C, 168 hr, in reference fuel B	15	%	ISO 1817
100°C, 168 hr, in ASTM #1 oil	4.0	%	ISO 1817
100°C, 168 hr, in IRM 903 oil	45	%	ISO 1817
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-67.2	°C	ASTM D746, ISO 812
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (190°C, 300 sec ⁻¹)	112	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.			
Injection	Nominal Value	Unit	
Drying Temperature	65.6	°C	
Drying Time	3.0	hr	
Suggested Max Regrind	25	%	
Rear Temperature	188 - 199	°C	
Middle Temperature	199 - 210	°C	

Front Temperature	216 - 227	°C
Nozzle Temperature	204 - 221	°C
Processing (Melt) Temp	199 - 221	°C
Mold Temperature	43.3 - 54.4	°C
Injection Pressure	1.03 - 4.14	MPa
Screw Speed	25 - 100	rpm

Injection instructions

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 %

NOTE


1. C mould

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