

Advanced Polymer Alloys DuraGrip™ DGR 6040 NC/BK Thermoplastic Elastomer (TPE)

Category : Polymer , Thermoplastic , Elastomer, TPE , Thermoplastic Olefinic Elastomer (TPO)

Material Notes:

DuraGrip® DGR 6040 NC/BK are designed to be general purpose Thermoplastic Elastomers (TPE) that are easy to use in injection molding and extrusion processes. DGR 6040 NC/BK have an excellent soft touch feel, will bond to olefinics, and are available in FDA compliant formulations. DuraGrip® is not hygroscopic and under normal conditions does not require drying. Information provided by Advanced Polymer Alloys

Order this product through the following link:

http://www.lookpolymers.com/polymer_Advanced-Polymer-Alloys-DuraGrip-DGR-6040-NCBK-Thermoplastic-Elastomer-TPE.php

Physical Properties	Metric	English	Comments
Specific Gravity	0.990 g/cc	0.990 g/cc	ASTM D471; ISO 2781
Viscosity	112000 cP	112000 cP	ASTM D3835
	@Shear Rate 300 1/s, Temperature 190 °C	@Shear Rate 300 1/s, Temperature 374 °F	
Linear Mold Shrinkage	0.017 cm/cm	0.017 in/in	
	0.029 cm/cm	0.029 in/in	
Linear Mold Shrinkage, Transverse	0.012 cm/cm	0.012 in/in	
	0.013 cm/cm	0.013 in/in	

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	42	42	Time of 5 seconds; ASTM D2240; ISO 48
Tensile Strength, Ultimate	4.6145 MPa	669.28 psi	After 7 days at 100°C; ASTM D412 ISO 37
	4.8738 MPa	706.88 psi	After 7 days at 70°C; ASTM D412 ISO 37
	5.18 MPa	752 psi	ASTM D412; ISO 37
Elongation at Break	452 %	452 %	ASTM D412; ISO 37
	456.2 %	456.2 %	After 7 days at 100°C; ASTM D412 ISO 37
	470.08 %	470.08 %	After 7 days at 70°C; ASTM D412 ISO 37
Modulus of Elasticity	0.00117 GPa	0.169 ksi	After 7 days at 70°C; ASTM D412 ISO 37
	0.00119 GPa	0.172 ksi	After 7 days at 100°C; ASTM D412

Mechanical Properties	Metric	English	ISO 37 Comments
100% Modulus	0.00124 GPa	0.180 ksi	ASTM D412; ISO 37
Graves Tear Strength	15.3 kN/m @Temperature 23.9 °C	87.0 pli @Temperature 75.0 °F	Die C; ASTM D624
Taber Abrasion, mg/1000 Cycles	120	120	Cs-17 Wheel, 1000 g Load; ASTM D3389
Compression Set	14 %	14 %	After 22 Hr at 75°F (24°C); ASTM D395; ISO 815
	34 % @Temperature 70.0 °C	34 % @Temperature 158 °F	22 hrs.; ASTM D395; ISO 815
	62 % @Temperature 100 °C	62 % @Temperature 212 °F	22 hrs.; ASTM D395; ISO 815
Tensile Set	7.0 %	7.0 %	100% Tension; ASTM D412

Thermal Properties	Metric	English	Comments
Brittleness Temperature	-67.2 °C	-89.0 °F	ASTM D746; ISO 812

Processing Properties	Metric	English	Comments
Processing Temperature	204 °C	400 °F	
Rear Barrel Temperature	188 - 199 °C	370 - 390 °F	
Middle Barrel Temperature	199 - 210 °C	390 - 410 °F	
Front Barrel Temperature	216 - 227 °C	420 - 440 °F	
Nozzle Temperature	204 - 221 °C	400 - 430 °F	
Melt Temperature	199 - 221 °C	390 - 430 °F	
Mold Temperature	43.3 - 54.4 °C	110 - 130 °F	
Injection Pressure	1.03 - 3.45 MPa	150 - 500 psi	
Cycle Time - Injection	0.50 - 2.0 sec	0.50 - 2.0 sec	boost
Screw Speed	25 - 100 rpm	25 - 100 rpm	
Cure Time	0.167 - 0.333 min	0.00278 - 0.00556 hour	Cooling Time

Descriptive Properties	Value	Comments
Fluid Resistance - Volume Change, % (ASTM D471)	-10	After 7 Days in Water at 212°F (100°C)

Descriptive Properties	Value	Comments
	4	After 7 Days in ASTM Oil No.1 at 212°F (100°C)
	45	After 7 Days in IRM 903 Oil No.3 at 212°F (100°C)

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