Dynaflex™ G7680-1 (Natural)

Thermoplastic Elastomer

Key Characteristics

Product Description
Dynaflex™ G7680-1 (Natural) is an easy processing, general purpose TPE designed for a wide variety of applications, including those where FDA compliance is required. • Overmold Adhesion to Polypropylene • Rubbery Feel • Soft Touch

General			
Material Status	• Commercial: Active		
Regional Availability	• Asia Pacific		
Features	• General Purpose • Good Colorability	• Good Flow • Good Processability	• Good Processing Stability
Uses	• Consumer Applications • Flexible Grips • Gaskets	• General Purpose • Overmolding • Seals	• Soft Touch Applications • Sporting Goods
Agency Ratings	• FDA 21 CFR 177.1210 [1]		
RoHS Compliance	• RoHS Compliant		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

Technical Properties [2]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Specific Gravity	1.18	1.18 g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	33 g/10 min	33 g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.0060 to 0.014 in/in	0.60 to 1.4 %	ASTM D955
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress [3, 4] (100% Strain, 73°F (23°C))	565 psi	3.90 MPa	ASTM D412
Tensile Stress [3, 4] (300% Strain, 73°F (23°C))	660 psi	4.55 MPa	ASTM D412
Tensile Strength [3, 4] (Break, 73°F (23°C))	1150 psi	7.93 MPa	ASTM D412
Tensile Elongation [3, 4] (Break, 73°F (23°C))	660 %	660 %	ASTM D412
Tear Strength	195 lbf/in	34.1 kN/m	ASTM D624
Compression Set (73°F (23°C), 22.0 hr)	23 %	23 %	ASTM D395B
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness (Shore A, 10 sec)	81	81	ASTM D2240
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 1340 sec^-1	47.3 Pa·s	47.3 Pa·s	
392°F (200°C), 11200 sec^-1	10.9 Pa·s	10.9 Pa·s	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Suggested Max Regrind	20 %	20 %
Rear Temperature	330 to 370 °F	166 to 188 °C

Injection	Typical Value (English)	Typical Value (SI)
Middle Temperature	350 to 370 °F	177 to 188 °C
Front Temperature	370 to 420 °F	188 to 216 °C
Nozzle Temperature	370 to 440 °F	188 to 227 °C
Mold Temperature	60.0 to 100 °F	15.6 to 37.8 °C
Back Pressure	0.00 to 120 psi	0.00 to 0.827 MPa
Screw Speed	40 to 100 rpm	40 to 100 rpm

Injection Notes

Color concentrates with polypropylene (PP), ethylene vinyl acetate (EVA), or low density polyethylene (PE) carriers are most suitable for coloring Dynaflex™ G7680-1 (Natural). Improved color dispersion can be achieved by using higher melt flow concentrates (with a melt flow from 25 - 40 g/10 min). Typical loadings for color concentrates are 1% to 5% by weight. Liquid color can be used, but mineral oil based carriers may have a significant effect on the final hardness value. Concentrates based on PVC should not be used. A high color match consistency can be obtained by using precolored compounds available from GLS. The final determination of color concentrate suitability should be determined by customer trials.

Purge thoroughly before and after use of this product with a low flow (0.5 - 2.5 MFR) polyethylene (PE) or polypropylene (PP).

Regrind levels up to 20% can be used with Dynaflex™ G7680-1 (Natural) with minimal property loss, provided that the regrind is free of contamination. To minimize losses during molding, the melt temperature should remain as low as possible. The final determination of regrind effectiveness should be determined by the customer.

Dynaflex™ G7680-1 (Natural) has excellent melt stability. Maximum residence times may vary, depending on the size of the barrel. Generally, the barrel should be emptied if it is idle for periods of 8 - 10 minutes or longer.

Drying is not Required

Injection Speed: 1 to 3 in/sec
1st Stage - Boost Pressure: 350 to 900 psi
2nd Stage - Hold Pressure: 30% of Boost
Hold Time (Thick Part): 3 to 10 sec
Hold Time (Thin Part): 1 to 3 sec

Notes

[1] Please contact GLS Thermoplastic Elastomers for a copy of the FDA compliance letter.

[2] Typical values are not to be construed as specifications.

[3] Die C

[4] 2 hr

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