Versaflex™ PKG 4160

Thermoplastic Elastomer

Key Characteristics

Product Description

Versaflex PKG 4160 is a thermoplastic elastomer designed for capliner applications and may be appropriate where FDA and EU 10/2011 compliances are required.

- Overmolding adhesion to HDPE, LDPE and PP
- Excellent Organoleptic Properties
- Soft touch, rubbery feel

General

Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Excellent Organoleptic Properties	• Good Adhesion	
Uses	• Caps • Closures	• General Purpose • Liners	• Packaging
Agency Ratings	• EU 10/2011 [1]	• FDA 21 CFR 177.1210 [1]	
RoHS Compliance	• RoHS Compliant		
Appearance	• Translucent		
Forms	• Pellets		
Processing Method	• Injection Molding	• Multi Injection Molding	

Technical Properties [2]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	0.885 g/cm³	0.885 g/cm³	ISO 1183
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress			ISO 37
Across Flow : Break	1160 psi	8.00 MPa	
Flow : Break	711 psi	4.90 MPa	
Tensile Elongation			ISO 37
Across Flow : Break	> 1000 %	> 1000 %	
Flow : Break	> 1000 %	> 1000 %	
Compression Set			ISO 815
73°F (23°C), 72 hr	23 %	23 %	
158°F (70°C), 22 hr	44 %	44 %	
212°F (100°C), 22 hr	73 %	73 %	
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Shore Hardness (Shore A, 10 sec)	60	60	ISO 48-4

Additional Information

Properties are measured using injection molded plaques.

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Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Suggested Max Regrind	20 %	20 %
Rear Temperature	329 to 347 °F	165 to 175 °C
Middle Temperature	347 to 374 °F	175 to 190 °C
Front Temperature	365 to 428 °F	185 to 220 °C
Nozzle Temperature	374 to 437 °F	190 to 225 °C
Mold Temperature	68 to 104 °F	20 to 40 °C
Back Pressure	0.00 to 131 psi	0.00 to 0.900 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 Versaflex PKG 4160. 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 Versaflex™ PKG 4160 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.

Versaflex™ PKG 4160 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 (2.5-7.6cm/sec)
1st Stage - Boost Pressure: 350 to 900 psi (2.41-6.21MPa)
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] Product rating may be influenced by end product design and/or conditions of use. Please contact GLS Thermoplastic Elastomers for information addressing EU (EU, 10/2011) and FDA (21 CFR 177.1210) compliance.

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

CONTACT INFORMATION

North America
Avon Lake, United States
33587 Walker Road
Avon Lake, OH, United States , 44012
+1 440 930 1000
+1 844 4AVIENT

South America
Sao Paulo, Brazil
Av. Francisco Nakasato, 1700
13295-000 Itupeva
Sao Paulo, Brazil
+55 11 4593 9200

Asia
Shanghai, China
2F, Block C
200 Jinsu Road
Pudong, 201206
Shanghai, China
+86 (0) 21 6028 4888

Europe
Pommerloch, Luxembourg
19 Route de Bastogne
Pommerloch, Luxembourg , L-9638
+352 269 050 35

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