Versaflex™ HC 2110-57B

Thermoplastic Elastomer

Key Characteristics

Product Description

Versaflex™ HC 2110-57B is a TPE designed for use in the healthcare industry offering low stiction and good compression set for syringe stoppers, gaskets, seals and other applications.

- Bonds to Polypropylene
- ETO, Gamma, and Autoclave sterilization compatible

-Compatible with Silicone lubricants

General			
Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Latin America • North America	
Features	• Good Sterilizability	• Low Compression Set	• Low Friction
Uses	• Gaskets • Medical/Healthcare Applications	• Overmolding • Plugs	
Agency Ratings	• ISO 10993 Part 4	• ISO 10993 Part 5	• USP Class VI [1]
RoHS Compliance	• RoHS Compliant		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		

Technical Properties [2]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density / Specific Gravity	1.01	1.01	ASTM D792
Molding Shrinkage - Flow	9.0E-3 to 0.019 in/in	0.90 to 1.9 %	ASTM D955
Molding Shrinkage - Across Flow	0.011 to 0.021 in/in	1.1 to 2.1 %	ASTM D955
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress [3, 4] (100% Strain, 73°F (23°C))	369 psi	2.54 MPa	ASTM D412
Tensile Stress [3, 4] (300% Strain, 73°F (23°C))	558 psi	3.85 MPa	ASTM D412
Tensile Strength [3, 4] (Break, 73°F (23°C))	537 psi	3.70 MPa	ASTM D412
Tensile Elongation [3, 4] (Break, 73°F (23°C))	350 %	350 %	ASTM D412
Tear Strength	147 lbf/in	25.7 kN/m	ASTM D624
Compression Set			ASTM D395B
70°F (21°C), 22 hr	20 %	20 %	
158°F (70°C), 22 hr	28 %	28 %	
212°F (100°C), 22 hr	37 %	37 %	
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness			ASTM D2240
Shore A, 10 sec, 73°F (23°C)	55	55	
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 11200 sec^-1	9.00 Pa·s	9.00 Pa·s	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Rear Temperature	330 to 360 °F	166 to 182 °C
Middle Temperature	380 to 420 °F	193 to 216 °C
Front Temperature	400 to 440 °F	204 to 227 °C
Nozzle Temperature	400 to 450 °F	204 to 232 °C
Mold Temperature	55 to 90 °F	13 to 32 °C
Screw Speed	80 to 120 rpm	80 to 120 rpm

Injection Notes

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

Versaflex™ HC 2110-57B 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: 0.5 to 2.5 in/sec
Hold Time (Thick Part): 2 to 7 sec
Hold Time (Thin Part): 1 to 3 sec

Notes

[1] Please contact PolyOne GLS Thermoplastic Elastomers for a complete copy of the GLS Healthcare Policy.
1. The Customer must notify GLS of any FDA Class I and/or European Union Class I medical devices for each specific product and application.
2. The Customer shall not knowingly manufacture, use, sell or otherwise supply, directly or indirectly products or compounds made from GLS products in any of the following without prior written approval by GLS for each specific product or application:
a. Cosmetics
b. Drugs and other Pharmaceuticals
c. Temporary or permanent implantation in the human body, regardless of the intended duration of implantation
d. Class II and Class III Medical Devices as defined in 21 CFR 860.3 ("Medical Devices")
e. Class IIa, IIb and III as defined in Directive 93/42/EEC

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

[3] Die C

[4] 2 hr

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