Versaflex™ HC 3810-90N EU

Thermoplastic Elastomer

Key Characteristics

Product Description		
Versaflex™ HC 3810-90N EU is a general purpose, unfilled TPE compound used for healthcare applications		
General		
Material Status	• Commercial: Active	
Regional Availability	• Europe	
Uses	• Medical/Healthcare Applications	
Agency Ratings	• ISO 10993-4 [1]	• ISO 10993-5 [1]
RoHS Compliance	• RoHS Compliant	
Appearance	• Translucent	
Forms	• Pellets	
Processing Method	• Injection Molding	

Technical Properties [2]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density / Specific Gravity	0.900	0.900	ISO 1183
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress [3] (300% Strain, 73°F (23°C))	1200 psi	8.30 MPa	ISO 37
Tensile Strength [3] (Break, 73°F (23°C))	2540 psi	17.5 MPa	ISO 37
Tensile Elongation [3] (Break, 73°F (23°C))	750 %	750 %	ISO 37
Tear Strength [4]			ISO 34-1
73°F (23°C), 0.0787 in (2.00 mm)	485 lbf/in	85.0 kN/m	
Compression Set [5]			ISO 815
73°F (23°C), 72 hr	37 %	37 %	
158°F (70°C), 22 hr	69 %	69 %	
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness (Shore A, 10 sec)	90	90	ISO 48-4
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 11200 sec^-1	12.9 Pa·s	12.9 Pa·s	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Suggested Max Regrind	20 %	20 %
Rear Temperature	338 to 374 °F	170 to 190 °C
Middle Temperature	356 to 383 °F	180 to 195 °C
Front Temperature	374 to 410 °F	190 to 210 °C
Nozzle Temperature	356 to 410 °F	180 to 210 °C
Processing (Melt) Temp	374 to 410 °F	190 to 210 °C
Mold Temperature	68 to 122 °F	20 to 50 °C
Back Pressure [6]	290 to 1450 psi	2.00 to 10.0 MPa
Screw Speed	80 to 100 rpm	80 to 100 rpm

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Injection Notes

Color concentrates with polypropylene (PP), ethylene vinyl acetate (EVA), or low density polyethylene (PE) carriers are most suitable for coloring Versaflex™ HC 3810-90N EU. 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. Concentrates based on PVC should not be used. 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™ HC 3810-90N EU with minimal property losses, provided that the regrind is free of contamination. To minimize losses during molding, the melt temperature should be as low as possible. The final determination of regrind effectiveness should be determined by the customer.

Versaflex™ HC 3810-90N EU 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

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] 7.9 in/min (200 mm/min)

[4] 20 in/min (500 mm/min)

[5] Method B

[6] If masterbatches are used, higher back pressure is needed.

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