Versaflex™ HC MT555

Thermoplastic Elastomer

Key Characteristics

Product Description

Versaflex™ HC MT555 is an easy processing material designed for applications where FDA compliance and medical testing is required.

- Excellent Colorability
- Soft Touch

General			
Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Latin America • North America	
Features	• Good Colorability	• Good Processability	• Good Processing Stability
Uses	• Medical/Healthcare Applications • Personal Care	• Transparent or Translucent Parts • Tubing	
Agency Ratings	• FDA 21 CFR 177.1210 [1] • ISO 10993-4	• ISO 10993-5 • USP Class VI [2]	
RoHS Compliance	• RoHS Compliant		
Appearance	• Translucent		
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

Technical Properties [3]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density / Specific Gravity	0.890	0.890	ASTM D792
Molding Shrinkage - Flow	0.016 to 0.022 in/in	1.6 to 2.2 %	ASTM D955
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress [4, 5] (100% Strain, 73°F (23°C))	252 psi	1.74 MPa	ASTM D412
Tensile Stress [4, 5] (300% Strain, 73°F (23°C))	480 psi	3.31 MPa	ASTM D412
Tensile Strength [4, 5] (Break, 73°F (23°C))	925 psi	6.38 MPa	ASTM D412
Tensile Elongation [4, 5] (Break, 73°F (23°C))	630 %	630 %	ASTM D412
Compression Set (73°F (23°C), 22 hr)	20 %	20 %	ASTM D395B
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness (Shore A, 10 sec)	54	54	ASTM D2240
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 1340 sec^-1	73.0 Pa·s	73.0 Pa·s	
392°F (200°C), 11200 sec^-1	13.1 Pa·s	13.1 Pa·s	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Suggested Max Regrind	20 %	20 %
Rear Temperature	330 to 360 °F	166 to 182 °C
Middle Temperature	360 to 400 °F	182 to 204 °C

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Injection	Typical Value (English)	Typical Value (SI)
Front Temperature	370 to 410 °F	188 to 210 °C
Nozzle Temperature	370 to 410 °F	188 to 210 °C
Processing (Melt) Temp	380 to 430 °F	193 to 221 °C
Mold Temperature	60 to 80 °F	16 to 27 °C
Back Pressure	0.00 to 80.0 psi	0.00 to 0.552 MPa
Screw Speed	80 to 120 rpm	80 to 120 rpm

Injection Notes

Color concentrates with polyproplene (PP), ethylene vinyl acetate (EVA), or low density polyethylene (LDPE) carriers are most suitable for coloring Versaflex™ HC MT555. 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 an 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™ HC MT555 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™ HC MT555 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 5 in/sec
1st Stage - Boost Pressure: 100 to 800 psi
2nd Stage - Hold Pressure: 20% of Boost
Hold Time (Thick Part): 4 to 10 sec
Hold Time (Thin Part): 1 to 4 sec

Extrusion	Typical Value (English)	Typical Value (SI)
Melt Temperature	380 to 400 °F	193 to 204 °C
Die Temperature	380 to 400 °F	193 to 204 °C

Extrusion Notes

Rear: 340 - 360F
Center: 380 - 400F
Front: 390 - 410F
Screw: 80 - 200 RPMs

Notes

[1] Please contact GLS Thermoplastic Elastomers for the specific FDA compliance letter on this product.

[2] 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

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

[4] Die C

[5] 2 hr

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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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