Versaflex™ OM 1040X-1

Thermoplastic Elastomer

Key Characteristics

Product Description

The Versaflex™ OM 1040X-1 is a medical compliant overmolding TPE with very good adhesion to PC or ABS-based plastics.

- Good Surface Aesthetics
- Rubbery Feel
- Soft Touch
- Very Good Bond to PC, ABS, PC/ABS

General			
Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Latin America • North America	
Features	• Good Colorability • Good Moldability	• Good Processability • Good Processing Stability	• Good Surface Finish
Uses	• Flexible Grips • Medical/Healthcare Applications	• Overmolding • Soft Touch Applications	• Transparent or Translucent Parts
Agency Ratings	• FDA • ISO 10993-4	• ISO 10993-5 • USP Class VI [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	0.920	0.920	ASTM D792
Melt Mass-Flow Rate (MFR)			ASTM D1238
190°C/2.16 kg	9.0 g/10 min	9.0 g/10 min	
200°C/5.0 kg	16 g/10 min	16 g/10 min	
Molding Shrinkage - Flow	0.020 to 0.026 in/in	2.0 to 2.6 %	ASTM D955
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress [3, 4] (100% Strain, 73°F (23°C))	180 psi	1.24 MPa	ASTM D412
Tensile Stress [3, 4] (300% Strain, 73°F (23°C))	301 psi	2.08 MPa	ASTM D412
Tensile Strength [3, 4] (Break, 73°F (23°C))	504 psi	3.47 MPa	ASTM D412
Tensile Elongation [3, 4] (Break, 73°F (23°C))	580 %	580 %	ASTM D412
Tear Strength	100 lbf/in	17.5 kN/m	ASTM D624
Compression Set (73°F (23°C), 22 hr)	22 %	22 %	ASTM D395B
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness (Shore A, 10 sec)	42	42	ASTM D2240
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 11200 sec^-1	11.7 Pa·s	11.7 Pa·s	

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Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Suggested Max Regrind	20 %	20 %
Rear Temperature	330 to 370 °F	166 to 188 °C
Middle Temperature	360 to 390 °F	182 to 199 °C
Front Temperature	370 to 400 °F	188 to 204 °C
Nozzle Temperature	380 to 420 °F	193 to 216 °C
Processing (Melt) Temp	370 to 410 °F	188 to 210 °C
Mold Temperature	70 to 90 °F	21 to 32 °C
Back Pressure	0.00 to 125 psi	0.00 to 0.862 MPa
Screw Speed	75 to 125 rpm	75 to 125 rpm

Injection Notes

Color concentrates with EVA, polypropylene (PP) or LDPE carrier are most suitable for coloring Versaflex™ OM 1040X-1. Typical letdown ratios are 50:1 to 25:1 - loading levels should be as low as possible to minimize the effect on adhesion. A high color match consistency can be obtained by the use of precolored compounds available from GLS. Concentrates based on PVC should not be used. The final determination of color concentrate suitability should be determined by customer trials. 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™ OM 1040X-1 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.

The Versaflex™ OM 1040X-1 has good 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: 200 to 600 psi
2nd Stage - Hold Pressure: 30% of Boost
Hold Time (Thick Part): 4 to 10 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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