Versaflex™ CL2003X

Thermoplastic Elastomer

Key Characteristics

Product Description

Versaflex™ CL2003X is an ultra-soft TPE designed for use in injection molding applications where exceptional clarity and ultra-soft properties are desired.

New Product. Commercial specifications have not been established.

- Tactile Feel
- Ultra-Soft
- Water Clarity

General			
Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Latin America • North America	
Features	• High Clarity	• Soft	
Uses	• Artificial Skin • Consumer Applications	• Footwear • Personal Care	• Toys • Transparent or Translucent Parts
Agency Ratings	• FDA		
RoHS Compliance	• RoHS Compliant		
Appearance	• Clear/Transparent		
Forms	• Pellets		
Processing Method	• Injection Molding		

Technical Properties [1]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density / Specific Gravity	0.870	0.870	ASTM D792
Molding Shrinkage - Flow	0.049 to 0.053 in/in	4.9 to 5.3 %	ASTM D955
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress [2, 3] (100% Strain, 73°F (23°C))	9.00 psi	0.0621 MPa	ASTM D412
Tensile Stress [2, 3] (300% Strain, 73°F (23°C))	15.0 psi	0.103 MPa	ASTM D412
Tensile Strength [2, 3] (Break, 73°F (23°C))	130 psi	0.896 MPa	ASTM D412
Tensile Elongation [2, 3] (Break, 73°F (23°C))	850 %	850 %	ASTM D412
Tear Strength	40.0 lbf/in	7.01 kN/m	ASTM D624
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness			ASTM D2240
Shore OO, 10 sec, 73°F (23°C)	33	33	
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 11200 sec^-1	1.30 Pa·s	1.30 Pa·s	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Suggested Max Regrind	20 %	20 %
Rear Temperature	230 to 260 °F	110 to 127 °C

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Injection	Typical Value (English)	Typical Value (SI)
Middle Temperature	270 to 300 °F	132 to 149 °C
Front Temperature	280 to 320 °F	138 to 160 °C
Nozzle Temperature	290 to 340 °F	143 to 171 °C
Processing (Melt) Temp	290 to 340 °F	143 to 171 °C
Mold Temperature	55 to 90 °F	13 to 32 °C
Back Pressure	0.00 to 50.0 psi	0.00 to 0.345 MPa
Screw Speed	25 to 110 rpm	25 to 110 rpm

Injection Notes

Color concentrates with Versaflex™ CL2003 as the carrier are most suitable for coloring this product. If a Versaflex™ CL2003X color concentrate carrier is desired, it is important that the chosen color house have underwater pelletization capabilities. Typical loadings for color concentrates are from 1% to 5% by weight. Liquid color (pigment, not dye) can be used; white oil carriers are recommended. A high color match consistency can be obtained by using precolored compounds available from GLS. Polypropylene (PP) based color concentrates are not recommended because they lead to poor dispersion and can significantly change the hardness of the material. 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™ CL2003X 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™ CL2003X 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 5 - 8 minutes or longer.

Drying is not Required

Injection Speed: 0.5 to 2 in/sec
1st Stage - Boost Pressure: 80 to 300 psi
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] Typical values are not to be construed as specifications.

[2] Die C

[3] 2 hr

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