Versalloy™ XL 9045-1

Thermoplastic Elastomer

Key Characteristics

Product Description

Versalloy™ XL 9045-1 is a TPV alloy with exceptional flow properties and surface aesthetics for a variety of applications.

- Excellent Flow for Long, Thin Flow Paths
- Exceptional Colorability
- Overmold Adhesion to Polypropylene
- Superior Surface Aesthetics

General		
Material Status	• Commercial: Active	
Regional Availability	• Africa & Middle East • Asia Pacific	• Latin America • North America
Features	• Good Colorability • Good Flow	• Good Surface Finish • Recyclable Material
Uses	• Consumer Applications • Overmolding	• Soft Touch Applications • Thin-walled Parts
Agency Ratings	• FDA 21 CFR 177.1210 [1]	
RoHS Compliance	• RoHS Compliant	
Appearance	• Natural Color	
Forms	• Pellets	
Processing Method	• Injection Molding	

Technical Properties [2]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density / Specific Gravity	0.880	0.880	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 [3, 4] (100% Strain, 70°F (21°C))	170 psi	1.17 MPa	ASTM D412
Tensile Stress [3, 4] (300% Strain, 73°F (23°C))	320 psi	2.21 MPa	ASTM D412
Tensile Strength [3, 4] (Break, 73°F (23°C))	484 psi	3.34 MPa	ASTM D412
Tensile Elongation [3, 4] (Break, 73°F (23°C))	480 %	480 %	ASTM D412
Tear Strength [3, 4] (70°F (21°C))	85.4 lbf/in	15.0 kN/m	ASTM D624
Compression Set			ASTM D395B
73°F (23°C), 22 hr	19 %	19 %	
158°F (70°C), 22 hr	34 %	34 %	
212°F (100°C), 22 hr	39 %	39 %	
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness (Shore A, 10 sec)	44	44	ASTM D2240
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 11200 sec^-1	6.70 Pa·s	6.70 Pa·s	

Additional Information

Versalloy™ XL 9045-1 can be recycled as a filler or impact modifier for polyolefins, or can be recycled by grinding and reintroduction to the molding process. Similar to PP or PE recycling process, if separated appropriately, it can be recycled many times.

Municipality waste stream recycle code is "7" which is designated for "Other".

Please contact GLS Thermoplastic Elastomers for a copy of our Recyclability Compliance letter.

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Suggested Max Regrind	20 %	20 %
Rear Temperature	300 to 370 °F	149 to 188 °C
Middle Temperature	320 to 390 °F	160 to 199 °C
Front Temperature	340 to 410 °F	171 to 210 °C
Nozzle Temperature	340 to 410 °F	171 to 210 °C
Mold Temperature	60 to 80 °F	16 to 27 °C
Back Pressure	100 to 200 psi	0.689 to 1.38 MPa
Screw Speed	50 to 100 rpm	50 to 100 rpm

Injection Notes

Color concentrates with polypropylene (PP) carrier are most suitable for coloring Versalloy™ XL 9045-1. 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. A high color match consistency can be obtained by the use of 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 Versalloy™ XL 9045-1 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.

Versalloy™ XL 9045-1 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: 300 to 700 psi
2nd Stage - Hold Pressure: 70% of Boost
Hold Time (Thick Part): 4 to 10 sec
Hold Time (Thin Part): 1 to 3 sec

Notes

[1] Please contact GLS Thermoplastic Elastomers for a copy of the FDA compliance letter.

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

[3] Die C

[4] 2 hr

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