GLS 451-083

Thermoplastic Elastomer

Key Characteristics

Product Description

GLS 451-083 is an exceptionally clear, high performance TPE developed for medical tubing for healthcare. GLS 451-083 has been specially formulated without the use of any plasticizers.

New Product. Commercial specifications have not been established.

- Flexible
- Formulated without plasticizers
- High Clarity

General		
Material Status	• Commercial: Active	
Regional Availability	• Africa & Middle East • Asia Pacific	• Latin America • North America
Features	• Good Flexibility	• High Clarity
Uses	• Medical/Healthcare Applications	• Tubing
Agency Ratings	• FDA	
RoHS Compliance	• RoHS Compliant	
Appearance	• Clear/Transparent	
Forms	• Pellets	
Processing Method	• Extrusion	

Technical Properties [1]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density / Specific Gravity	0.890	0.890	ASTM D792
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress [2, 3] (100% Strain, 73°F (23°C))	464 psi	3.20 MPa	ASTM D412
Tensile Stress [2, 3] (300% Strain, 73°F (23°C))	754 psi	5.20 MPa	ASTM D412
Tensile Strength [2, 3] (Break, 73°F (23°C))	1160 psi	8.00 MPa	ASTM D412
Tensile Elongation [2, 3] (Break, 73°F (23°C))	500 %	500 %	ASTM D412
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness (Shore A, 10 sec)	73	73	ASTM D2240
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 1340 sec^-1	182 Pa·s	182 Pa·s	
392°F (200°C), 11200 sec^-1	40.0 Pa·s	40.0 Pa·s	

Processing Information

Extrusion	Typical Value (English)	Typical Value (SI)
Melt Temperature	360 to 400 °F	182 to 204 °C
Die Temperature	340 to 390 °F	171 to 199 °C

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Extrusion Notes

Color concentrates with polypropylene (PP), ethylene vinyl acetate (EVA), or low density polyethylene (PE) carriers are most suitable for coloring GLS 451-083. Improved color dispersion can be achieved by using higher melt flow concentrates (with a melt flow from 25 - 40g/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 a significant 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).

Drying is not Required

Rear: 330F-370F
Center: 350F-400F
Front: 360F-420F
Screw: 100-500RPM

Notes

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

[2] Die C

[3] 2 hr

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