

Lubrizol Estane® 2102-80A Thermoplastic Polyurethane Elastomer

Category : Polymer , Thermoplastic , Elastomer, TPE , Polyurethane, TP , Thermoplastic Polyurethane, Elastomer, Polyester Grade

Material Notes:

Formerly Pellethane
Feature: Low compression set
Available in Americas, Europe, Middle East, Africa, India and Asia
Data provided by Lubrizol
Lubrizol acquired the Pellethane product line from Dow in 2009.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Lubrizol-Estane-2102-80A-Thermoplastic-Polyurethane-Elastomer.php

Physical Properties	Metric	English	Comments
Density	1.18 g/cc	0.0426 lb/in ³	ASTM D792
Linear Mold Shrinkage, Flow	0.0050 - 0.0060 cm/cm	0.0050 - 0.0060 in/in	ASTM D955
Linear Mold Shrinkage, Transverse	0.0020 - 0.0050 cm/cm	0.0020 - 0.0050 in/in	ASTM D955
Melt Flow	4.0 g/10 min @Load 8.70 kg, Temperature 190 °C	4.0 g/10 min @Load 19.2 lb, Temperature 374 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	84	84	ASTM D2240
Tensile Strength, Ultimate	40.0 MPa	5800 psi	ASTM D412
Elongation at Break	575 %	575 %	ASTM D412
50% Modulus	0.00390 GPa	0.566 ksi	ASTM D412
100% Modulus	0.00550 GPa	0.798 ksi	ASTM D412
300% Modulus	0.0131 GPa	1.90 ksi	ASTM D412
Tear Strength	105 kN/m	599 pli	Die C; ASTM D624
Taber Abrasion, mg/1000 Cycles	10	10	H22 Wheel, 1000 g; ASTM D1044
Compression Set	28 % @Temperature 25.0 °C, Time 79200 sec	28 % @Temperature 77.0 °F, Time 22.0 hour	ASTM D395, Method B
	28 % @Temperature 70.0 °C, Time 79200 sec	28 % @Temperature 158 °F, Time 22.0 hour	ASTM D395, Method B
Tensile Set	50 %	50 %	Elongation set after break; ASTM D412

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	158 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	87.8 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM D696
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Vicat Softening Point	85.0 $^{\circ}\text{C}$	185 $^{\circ}\text{F}$	120 $^{\circ}\text{C}/\text{hr}$, 9.8N; ASTM D1525
Glass Transition Temp, Tg	-40.0 $^{\circ}\text{C}$	-40.0 $^{\circ}\text{F}$	

Processing Properties	Metric	English	Comments
Melt Temperature	199 - 216 $^{\circ}\text{C}$	390 - 421 $^{\circ}\text{F}$	Molding
Mold Temperature	16.0 - 60.0 $^{\circ}\text{C}$	60.8 - 140 $^{\circ}\text{F}$	
Drying Temperature	82.0 - 93.0 $^{\circ}\text{C}$	180 - 199 $^{\circ}\text{F}$	air dew pint $\leq$ -40 $^{\circ}\text{C}$

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