

Lubrizol Estane® 2103-90AE Thermoplastic Polyurethane Elastomer

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

Material Notes:

Formerly Pellethane 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-2103-90AE-Thermoplastic-Polyurethane-Elastomer.php

Physical Properties	Metric	English	Comments
Density	1.14 g/cc	0.0412 lb/in ³	ASTM D792
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	ASTM D955
Linear Mold Shrinkage, Transverse	0.0040 - 0.0060 cm/cm	0.0040 - 0.0060 in/in	ASTM D955
Melt Flow	7.0 g/10 min @Load 8.70 kg, Temperature 224 °C	7.0 g/10 min @Load 19.2 lb, Temperature 435 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	90	90	ASTM D2240
Hardness, Shore D	47	47	ASTM D2240
Tensile Strength, Ultimate	38.2 MPa	5540 psi	ASTM D1238
Elongation at Break	530 %	530 %	ASTM D412
50% Modulus	0.00630 GPa	0.914 ksi	ASTM D412
100% Modulus	0.00970 GPa	1.41 ksi	ASTM D412
300% Modulus	0.0179 GPa	2.60 ksi	ASTM D412
Flexural Modulus	0.0695 GPa	10.1 ksi	ASTM D790
Tear Strength	133 kN/m	759 pli	Die C; ASTM D624
Taber Abrasion, mg/1000 Cycles	50	50	H22 Wheel, 1000g; ASTM D1044
Compression Set	25 % @Temperature 25.0 °C, Time 79200 sec	25 % @Temperature 77.0 °F, Time 22.0 hour	ASTM D395, Method B
	40 % @Temperature 70.0 °C, Time 79200 sec	40 % @Temperature 158 °F, Time 22.0 hour	ASTM D395, Method B

Mechanical Properties	Metric	English	Comments
			set after break, ASTM D412

Thermal Properties	Metric	English	Comments
CTE, linear	155 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 20.0 $^{\circ}\text{C}$	86.1 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 68.0 $^{\circ}\text{F}$	ASTM D696
Vicat Softening Point	90.6 $^{\circ}\text{C}$	195 $^{\circ}\text{F}$	120 $^{\circ}\text{C}/\text{hr}$, 9.8N; ASTM D1525
Glass Transition Temp, Tg	-34.0 $^{\circ}\text{C}$	-29.2 $^{\circ}\text{F}$	

Processing Properties	Metric	English	Comments
Melt Temperature	193 - 210 $^{\circ}\text{C}$	379 - 410 $^{\circ}\text{F}$	Molding
Mold Temperature	86.7 - 95.6 $^{\circ}\text{C}$	188 - 204 $^{\circ}\text{F}$	
Drying Temperature	88.0 - 104 $^{\circ}\text{C}$	190 - 219 $^{\circ}\text{F}$	air dew point $\leq -40^{\circ}\text{C}$

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