

Lubrizol Estane® 2103-90A Thermoplastic Polyurethane Elastomer

Category : Polymer , Thermoplastic , Elastomer, TPE , Polyurethane, TP , Thermoplastic Polyurethane, Elastomer, Ether 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-2103-90A-Thermoplastic-Polyurethane-Elastomer.php

Physical Properties	Metric	English	Comments
Density	1.14 g/cc	0.0412 lb/in ³	ASTM D792
Linear Mold Shrinkage	0.0070 - 0.0080 cm/cm @Thickness 1.59 mm	0.0070 - 0.0080 in/in @Thickness 0.0625 in	plaque
Linear Mold Shrinkage, Transverse	0.0070 - 0.0080 cm/cm @Thickness 1.59 mm	0.0070 - 0.0080 in/in @Thickness 0.0625 in	plaque
Melt Flow	23 g/10 min @Load 8.70 kg, Temperature 190 °C	23 g/10 min @Load 19.2 lb, Temperature 374 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	88 - 96	88 - 96	ASTM D2240
Tensile Strength, Ultimate	44.8 MPa	6500 psi	ASTM D412
Elongation at Break	450 %	450 %	ASTM D412
50% Modulus	0.00760 GPa	1.10 ksi	ASTM D412
100% Modulus	0.0112 GPa	1.62 ksi	ASTM D412
300% Modulus	0.0248 GPa	3.60 ksi	ASTM D412
Flexural Modulus	0.0758 GPa	11.0 ksi	ASTM D790
Tear Strength	133 kN/m	759 pli	Die C; ASTM D624
Taber Abrasion, mg/1000 Cycles	10	10	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
	28 % @Temperature 70.0 °C,	28 % @Temperature 158 °F,	ASTM D395, Method B

Mechanical Properties	Time 79200 sec Metric	Time 22.0 hour English	Comments
Tensile Set	30 %	30 %	Elongation set after break; ASTM D412

Thermal Properties	Metric	English	Comments
CTE, linear	152 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	84.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM D696
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
Vicat Softening Point	107 $^\circ\text{C}$	225 $^\circ\text{F}$	ASTM D1525
Glass Transition Temp, Tg	-25.0 $^\circ\text{C}$	-13.0 $^\circ\text{F}$	

Processing Properties	Metric	English	Comments
Melt Temperature	204 - 221 $^\circ\text{C}$	399 - 430 $^\circ\text{F}$	Molding
Mold Temperature	16.0 - 60.0 $^\circ\text{C}$	60.8 - 140 $^\circ\text{F}$	
Drying Temperature	88.0 - 104 $^\circ\text{C}$	190 - 219 $^\circ\text{F}$	

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