

Lubrizol Estane® 2102-90A 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-2102-90A-Thermoplastic-Polyurethane-Elastomer.php

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 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	0.0060 - 0.0070 cm/cm	0.0060 - 0.0070 in/in	ASTM D955
Melt Flow	11 g/10 min @Load 1.20 kg, Temperature 224 °C	11 g/10 min @Load 2.65 lb, Temperature 435 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	94	94	ASTM D2240
Tensile Strength, Ultimate	44.8 MPa	6500 psi	ASTM D412
Elongation at Break	440 %	440 %	ASTM D412
50% Modulus	0.00840 GPa	1.22 ksi	ASTM D412
100% Modulus	0.0110 GPa	1.60 ksi	ASTM D412
300% Modulus	0.0276 GPa	4.00 ksi	ASTM D412
Flexural Modulus	0.0827 GPa	12.0 ksi	ASTM D790
Tear Strength	145 kN/m	827 pli	Die C; ASTM D624
Taber Abrasion, mg/1000 Cycles	10	10	H22 Wheel, 1000 g; 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
	29 % @Temperature 70.0 °C, Time 79200 sec	29 % @Temperature 158 °F, Time 22.0 hour	ASTM D395, Method B
Tensile Set	30 %	30 %	Elongation set after break; ASTM D412

Mechanical Properties	Metric	English	Comments
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	150 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	83.3 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM D696
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Vicat Softening Point	117 $^{\circ}\text{C}$	243 $^{\circ}\text{F}$	120 $^{\circ}\text{C}/\text{hr}$, 9.8N; ASTM D1525

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 $^{\circ}\text{F}$	air dew point $<-40^{\circ}\text{C}$

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