

Lubrizol Estane® 2103-90AEL Film Grade Thermoplastic Polyurethane Elastomer

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

Material Notes:

Formerly Pellethane
 Feature: Film resin for injection blow molding
 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-2103-90AEL-Film-Grade-Thermoplastic-Polyurethane-Elastomer.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.14 g/cc	1.14 g/cc	ASTM D792
Linear Mold Shrinkage, Flow	0.0050 - 0.0080 cm/cm	0.0050 - 0.0080 in/in	ASTM D955
Linear Mold Shrinkage, Transverse	0.0040 - 0.0050 cm/cm	0.0040 - 0.0050 in/in	ASTM D955
Melt Flow	1.2 g/10 min @Load 8.70 kg, Temperature 224 °C	1.2 g/10 min @Load 19.2 lb, Temperature 435 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	92	92	ASTM D2240
Tensile Strength, Ultimate	38.9 MPa	5640 psi	ASTM D412
Elongation at Break	480 %	480 %	ASTM D412
50% Modulus	0.00690 GPa	1.00 ksi	ASTM D412
100% Modulus	0.00970 GPa	1.41 ksi	ASTM D412
300% Modulus	0.0203 GPa	2.94 ksi	ASTM D412
Flexural Modulus	0.0689 GPa	10.0 ksi	ASTM D790
Tear Strength	94.6 kN/m	540 pli	Die C; ASTM D624
Taber Abrasion, mg/1000 Cycles	50	50	H-22 wheel (coarser), 1000g; ASTM D1044
Compression Set	25 %	25 %	22 hrs. @ 77°F (25°C); ASTM D395, Method B
	40 % @Temperature 70.0 °C	40 % @Temperature 158 °F	22 hrs.; ASTM D395, Method B
Tensile Set	60 %	60 %	Elongation Set After Break; ASTM D412

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	156 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	86.7 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM D696
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Vicat Softening Point	102 $^{\circ}\text{C}$	216 $^{\circ}\text{F}$	120 $^{\circ}\text{C}/\text{hr}$, 9.8N; ASTM D1525
Glass Transition Temp, Tg	-27.0 $^{\circ}\text{C}$	-16.6 $^{\circ}\text{F}$	DSC

Processing Properties	Metric	English	Comments
Melt Temperature	188 - 204 $^{\circ}\text{C}$	370 - 399 $^{\circ}\text{F}$	Extrusion
	193 - 210 $^{\circ}\text{C}$	379 - 410 $^{\circ}\text{F}$	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 $\leq -40^{\circ}\text{C}$

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