



Estane® 58144 TPU

Lubrizol Advanced Materials, Inc. - Thermoplastic Polyurethane Elastomer (Polyether)

Wednesday, November 6, 2019

General Information

Product Description

Type: Estane® 58144 is a 65D Polyether-type thermoplastic polyurethane (TPU) compound.

Features: FDA (contact Lubrizol for details). Pre-drying: 2 hours at 104°C (220°F) in Dehumidifying Hopper Dryer

Uses: Injection Molding

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Agency Ratings	• FDA Unspecified Rating		
RoHS Compliance	• RoHS Compliant		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.18		ASTM D792
Molding Shrinkage - Flow ²	5.0E-3	in/in	
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638
--	6660	psi	
100% Strain	3500	psi	
300% Strain	5610	psi	
Tensile Elongation (Break)	340	%	ASTM D638
Apparent Bending Modulus (73°F)	31500	psi	ASTM D747
Flexural Modulus (73°F)	44900	psi	ASTM D790
Elastomers	Nominal Value	Unit	Test Method
Tensile Set (200% Strain)	53	%	ASTM D412
Tensile Stress (100% Strain)	3500	psi	ASTM D412
Tensile Stress (300% Strain)	5610	psi	ASTM D412
Tensile Strength (Break)	6660	psi	ASTM D412
Tensile Elongation (Break)	340	%	ASTM D412
Tear Strength ³	976	lbf/in	ASTM D624
Tear Strength (Split)	200	lbf/in	ASTM D470
Compression Set			ASTM D395
73°F, 22 hr	66	%	
158°F, 22 hr	93	%	
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	62 to 68		ASTM D2240
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ⁴	-40.0	°F	DSC
Vicat Softening Temperature	216	°F	ASTM D1525

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Processing Information		
Injection	Nominal Value	Unit
Drying Temperature	219	°F
Drying Time	2.0	hr
Suggested Max Moisture	0.020	%
Rear Temperature	390	°F
Middle Temperature	464	°F
Front Temperature	419	°F
Nozzle Temperature	424	°F
Processing (Melt) Temp	399	°F
Mold Temperature	50 to 72	°F
Injection Pressure	10000 to 20000	psi
Injection Rate	Slow-Moderate	
Back Pressure	50.0	psi
Screw Speed	20 to 50	rpm
Injection Notes		
Molding Pressure: 5000 to 15000 psi		

Notes

¹ Typical properties: these are not to be construed as specifications.

² 3x6x0.125 in molded plaque

³ Die C

⁴ 10°C/min