

Estane® 58144 TPU

Thermoplastic Polyurethane Elastomer (Polyether)

Lubrizol Advanced Materials, Inc.

Message:

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 Information			
Agency Ratings	FDA not rated		
RoHS Compliance	RoHS compliance		
Forms	Particle		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.18	g/cm ³	ASTM D792
Molding Shrinkage - Flow ¹	0.50	%	
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	62 - 68		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638
--	45.9	MPa	ASTM D638
100% strain	24.1	MPa	ASTM D638
300% strain	38.7	MPa	ASTM D638
Tensile Elongation (Break)	340	%	ASTM D638
Apparent Bending Modulus (23°C)	217	MPa	ASTM D747
Flexural Modulus (23°C)	310	MPa	ASTM D790
Elastomers	Nominal Value	Unit	Test Method
Tensile Set (200% Strain)	53	%	ASTM D412
Tensile Stress			ASTM D412
100% strain	24.1	MPa	ASTM D412
300% strain	38.7	MPa	ASTM D412
Tensile Strength (Break)	45.9	MPa	ASTM D412
Tensile Elongation (Break)	340	%	ASTM D412
Tear Strength			
-- ²	171	kN/m	ASTM D624
Cracking	36	kN/m	ASTM D470
Compression Set			ASTM D395
23°C, 22 hr	66	%	ASTM D395
70°C, 22 hr	93	%	ASTM D395
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ³	-40.0	°C	DSC

Vicat Softening Temperature	102	°C	ASTM D1525
Injection	Nominal Value	Unit	
Drying Temperature	104	°C	
Drying Time	2.0	hr	
Suggested Max Moisture	0.020	%	
Rear Temperature	199	°C	
Middle Temperature	240	°C	
Front Temperature	215	°C	
Nozzle Temperature	218	°C	
Processing (Melt) Temp	204	°C	
Mold Temperature	10.0 - 22.0	°C	
Injection Pressure	69.0 - 138	MPa	
Injection Rate	Slow-Moderate		
Back Pressure	0.345	MPa	
Screw Speed	20 - 50	rpm	

Injection instructions

Molding Pressure: 5000 to 15000 psi

NOTE

1. 3x6x0.125 in molded plaque
2. C mould
3. 10°C/min

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