



Estane® 58309 TPU

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

Wednesday, November 6, 2019

General Information

Product Description

Type: Estane® 58309 is an 85A aromatic Polyether-Based Thermoplastic Polyurethane (TPU).

Features: Good Physical Properties and Reduced Surface Tack.

Uses: Flat Die/Cast Film and Blown Film Extrusion, Injection Molding

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Latin America	• North America
Features	• Aromatic		
Uses	• Blown Film • Cast Film		
Agency Ratings	• FDA 21 CFR 177.2600	• NSF STD-61	
RoHS Compliance	• RoHS Compliant		
Forms	• Pellets		
Processing Method	• Blown Film	• Extrusion	
	• Cast Film	• Injection Molding	

ASTM & ISO Properties¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.13		ASTM D792
Molding Shrinkage - Across Flow	0.014	in/in	ASTM D955
Elastomers	Nominal Value	Unit	Test Method
Tensile Set (200% Strain)	19	%	ASTM D412
Tensile Stress (100% Strain, 0.0300 in)	899	psi	ASTM D412
Tensile Stress (300% Strain, 0.0300 in)	1600	psi	ASTM D412
Tensile Strength (Break, 0.0300 in)	6500	psi	ASTM D412
Tensile Elongation (Break, 0.0300 in)	570	%	ASTM D412
Tear Strength ² (0.0300 in)	454	lbf/in	ASTM D624
Tear Strength (Split)	130	lbf/in	ASTM D470
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A, 5 sec)	82 to 88		ASTM D2240
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature	-50.8	°F	DSC
Melting Temperature	275	°F	DSC
Kofler Melting Temperature	293	°F	Internal Method
Aging	Nominal Value	Unit	Test Method
Change in Volume (73°F, 24 hr, in Water)	1.7	%	ASTM D471

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	219	°F
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.020	%

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Injection	Nominal	Value	Unit
Rear Temperature	379	°F	
Middle Temperature	399	°F	
Front Temperature	421	°F	
Nozzle Temperature	421	°F	
Processing (Melt) Temp	421	°F	
Injection Pressure	3050 to 6960	psi	
Injection Rate	Slow-Moderate		
Holding Pressure	2030 to 4060	psi	
Back Pressure	50.0	psi	
Screw Speed	20 to 50	rpm	

Injection Notes

Air Dew Point: -40°C

Extrusion	Nominal	Value	Unit
Drying Temperature	219	°F	
Drying Time	2.0 to 4.0	hr	
Suggested Max Moisture	0.020	%	
Cylinder Zone 1 Temp.	349	°F	
Cylinder Zone 2 Temp.	361	°F	
Cylinder Zone 3 Temp.	370	°F	
Cylinder Zone 4 Temp.	381	°F	
Adapter Temperature	381	°F	
Melt Temperature	381	°F	
Die Temperature	381	°F	

Extrusion Notes

Dew Point: -40°C

Screen Pack Recommendation: 20/40/80/20

Notes

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

² Die C