



Sarlink® 3139D

DSM Thermoplastic Elastomers Inc. - Thermoplastic Elastomer

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General Information

Product Description

SARLINK® 3139D is a high hardness, multi-purpose thermoplastic elastomer featuring excellent resiliency, heat resistance and flex fatigue resistance. SARLINK® 3139D can be processed by injection molding, extrusion and blow molding to produce clamps, grommets, profiles, boots, ducts and bellows.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific • Europe	• North America • South America	
Features	• Fatigue Resistant • High Hardness	• Medium Heat Resistance • Resilient	
Uses	• Grommets	• Profiles	
Forms	• Pellets		
Processing Method	• Blow Molding	• Extrusion	• Injection Molding

ASTM and ISO Properties ¹

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity	0.940	0.938	ASTM D792
Density	0.940 g/cm ³	0.940 g/cm ³	ISO 1183

Elastomers	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Stress			ASTM D412
Across Flow: 100% Strain	1360 psi	9.40 MPa	
Flow: 100% Strain	1470 psi	10.1 MPa	
Tensile Stress ²			ISO 37
Across Flow: 100% Strain	1330 psi	9.20 MPa	
Flow: 100% Strain	1930 psi	13.3 MPa	
Tensile Strength			ASTM D412
Across Flow: Yield	2350 psi	16.2 MPa	
Flow: Yield	2120 psi	14.6 MPa	
Tensile Stress ²			ISO 37
Across Flow: Break	2470 psi	17.0 MPa	
Flow: Break	2520 psi	17.4 MPa	
Tensile Elongation			ASTM D412
Across Flow: Break	710 %	710 %	
Flow: Break	630 %	630 %	
Tensile Elongation ²			ISO 37
Across Flow: Break	730 %	730 %	
Flow: Break	620 %	620 %	
Tear Strength - Across Flow (Die C)	430 lbf/in	76 kN/m	ASTM D624

Elastomers	Nominal Value (English)	Nominal Value (SI)	Test Method
Tear Strength - Across Flow			ISO 34-1
Method A, Trouser	250 lbf/in	43 kN/m	
Method Ba, Angle (Unnicked)	580 lbf/in	100 kN/m	
Compression Set ³			ASTM D395
73 °F (23 °C), 22.0 hr	43 %	43 %	
158 °F (70 °C), 22.0 hr	61 %	61 %	
212 °F (100 °C), 22.0 hr	70 %	70 %	
Compression Set			ISO 815
73 °F (23 °C), 72.0 hr	53 %	53 %	
158 °F (70 °C), 22.0 hr	65 %	65 %	
212 °F (100 °C), 22.0 hr	75 %	75 %	
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Durometer Hardness			ASTM D2240
Shore D, 5 sec, Extruded	38	38	
Shore D, 5 sec, Injection Molded	42	42	
Shore Hardness			ISO 868
Shore D, 5 sec, Extruded	38	38	
Shore D, 5 sec, Injection Molded	41	41	
Aging	Nominal Value (English)	Nominal Value (SI)	Test Method
Change in Tensile Strength in Air			ASTM D573
Across Flow: 257 °F (125 °C), 1000 hr	-7.0 %	-7.0 %	
100 % Strain, Across Flow: 257 °F (125 °C), 1000 hr	16 %	16 %	
Across Flow: 302 °F (150 °C), 168 hr	-7.0 %	-7.0 %	
100 % Strain, Across Flow: 302 °F (150 °C), 168 hr	11 %	11 %	
Change in Tensile Strength in Air			ISO 188
257 °F (125 °C), 1000 hr	-7.0 %	-7.0 %	
302 °F (150 °C), 336 hr	-2.0 %	-2.0 %	
Change in Ultimate Elongation in Air - Across Flow			ASTM D573
257 °F (125 °C), 1000 hr	-11 %	-11 %	
302 °F (150 °C), 168 hr	-16 %	-16 %	
Change in Tensile Strain at Break in Air			ISO 188
257 °F (125 °C), 1000 hr	-11 %	-11 %	
302 °F (150 °C), 336 hr	-12 %	-12 %	
Change in Durometer Hardness in Air			ASTM D573
257 °F (125 °C), 1000 hr	4.6	4.6	
302 °F (150 °C), 168 hr	0.90	0.90	
Change in Shore Hardness in Air - Shore D			ISO 188
257 °F (125 °C), 1000 hr	2.0	2.0	
302 °F (150 °C), 336 hr	2.0	2.0	
Change in Volume			ASTM D471
250 °F (121 °C), 24 hr, in ASTM Oil #3	46 %	46 %	
257 °F (125 °C), 70 hr, in ASTM Oil #3	55 %	55 %	
Change in Volume			ISO 1817
73 °F (23 °C), 168 hr, in Reference Fuel B	36 %	36 %	
212 °F (100 °C), 72 hr, in Water	1.0 %	1.0 %	
212 °F (100 °C), 168 hr, in ASTM #1 Oil	10 %	10 %	

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Fill Analysis	Nominal Value (English)	Nominal Value (SI)	Test Method
Apparent Viscosity 392 °F (200 °C), 206 sec ⁻¹	292 Pa·s	292 Pa·s	ASTM D3835

Processing Information			
Injection	Nominal Value (English)	Nominal Value (SI)	
Rear Temperature	356 to 419 °F	180 to 215 °C	
Middle Temperature	356 to 419 °F	180 to 215 °C	
Front Temperature	356 to 419 °F	180 to 215 °C	
Nozzle Temperature	369 to 428 °F	187 to 220 °C	
Processing (Melt) Temp	365 to 428 °F	185 to 220 °C	
Mold Temperature	50.0 to 131 °F	10.0 to 55.0 °C	
Back Pressure	14.5 to 145 psi	0.1000 to 1.00 MPa	
Screw Speed	100 to 200 rpm	100 to 200 rpm	

Extrusion	Nominal Value (English)	Nominal Value (SI)	
Cylinder Zone 1 Temp.	356 to 392 °F	180 to 200 °C	
Cylinder Zone 2 Temp.	356 to 401 °F	180 to 205 °C	
Cylinder Zone 3 Temp.	369 to 410 °F	187 to 210 °C	
Cylinder Zone 4 Temp.	369 to 410 °F	187 to 210 °C	
Melt Temperature	383 to 419 °F	195 to 215 °C	
Die Temperature	383 to 419 °F	195 to 215 °C	
Take-Off Roll	68.0 to 122 °F	20.0 to 50.0 °C	

Extrusion Notes

Screen Pack: 20 to 60 mesh
Screw: general purpose
Compression Ratio: 3:1

Notes

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

² Type 2

³ Method B