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TEKNOR APEX

Sarlink® TPV 4139D

Teknor Apex Company - Thermoplastic Vulcanizate

General Information

Product Description

SARLINK® TPV 4100 series are engineered materials designed primarily for demanding automotive and industrial applications. Available in both black and natural, SARLINK® 4139D is a low density, high hardness thermoplastic vulcanizate that exhibits exceptional tensile strength, superior compression set, chemical resistance and high temperature performance. This grade can be processed by injection molding, blow molding and extrusion for applications such as seals, gaskets, chemical resistant hose and tube, boots and bellows.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific • Europe	• Latin America • North America	
Features	• Chemical Resistant • Fatigue Resistant • Good Adhesion • Good Moldability • Good Processability	• Good Surface Finish • High Hardness • High Melt Stability • Low Density • Low Specific Gravity	• Low Temperature Flexibility • Medium Heat Resistance • Resilient
Uses	• Appliance Components • Automotive Applications • Automotive Exterior Parts • Automotive Interior Parts • Automotive Under the Hood	• Blow Molding Applications • Grommets • Handles • Industrial Applications • Plugs	• Profiles • Rubber Replacement • Seals
Agency Ratings	• UL 94		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• FORD WSD-M2D441-A Color: Black • FORD WSD-M2D441-A Color: Natural • GM GMP.E/P.006 Color: Black • GM GMP.E/P.006 Color: Natural	• GM GMW15813 Type 9 Color: Black • GM GMW15813 Type 9 Color: Natural • GM QK 3531 Type 2 Color: Black • GM QK 3531 Type 2 Color: Natural	• STELLANTIS B62 0300 Color: Black • STELLANTIS MS-AR-100 FGN Color: Black • STELLANTIS MS-AR-100 FGN Color: Natural • VAG VW501 23 Color: Black
UL File Number	• QMFZ2.E54709		
Appearance	• Black	• Natural Color	• Opaque
Forms	• Pellets		
Processing Method	• Blow Molding • Extrusion	• Injection Molding • Profile Extrusion	

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.950		ASTM D792
Density	0.950	g/cm³	ISO 1183
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress			ASTM D412
Across Flow : 100% Strain	1290	psi	
Flow : 100% Strain	1930	psi	
Tensile Stress			ISO 37
Across Flow : 100% Strain	1290	psi	
Flow : 100% Strain	1930	psi	
Tensile Strength			ASTM D412
Across Flow : Break	2760	psi	
Flow : Break	2610	psi	

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Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ISO 37
Across Flow : Break	2760	psi	
Flow : Break	2610	psi	
Tensile Elongation			ASTM D412
Across Flow : Break	700	%	
Flow : Break	420	%	
Tensile Elongation			ISO 37
Across Flow : Break	700	%	
Flow : Break	420	%	
Tear Strength - Across Flow	550	lbf/in	ASTM D624
Tear Strength - Flow [2]	554	lbf/in	ISO 34-1
Compression Set			ASTM D395
73°F, 22 hr	46	%	
158°F, 22 hr	56	%	
257°F, 70 hr	80	%	
Compression Set			ISO 815
73°F, 22 hr	46	%	
158°F, 22 hr	56	%	
257°F, 70 hr	80	%	

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240
Shore D, 5 sec, Extruded	39		
Shore D, 5 sec, Injection Molded	40		
Shore Hardness			ISO 868
Shore D, 5 sec, Extruded	39		
Shore D, 5 sec, Injection Molded	40		

Thermal	Nominal Value	Unit	Test Method
RTI Elec	212	°F	UL 746B
RTI Imp	212	°F	UL 746B
RTI Str	212	°F	UL 746B

Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air - Across Flow			ASTM D573
275°F, 1000 hr	-15	%	
100% Strain, 275°F, 1000 hr	20	%	
302°F, 168 hr	-15	%	
100% Strain, 302°F, 168 hr	15	%	
Change in Tensile Strength in Air - Across Flow			ISO 188
275°F, 1000 hr	-15	%	
100% Strain 275°F, 1000 hr	20	%	
302°F, 168 hr	-15	%	
100% Strain 302°F, 168 hr	15	%	
Change in Ultimate Elongation in Air - Across Flow			ASTM D573
275°F, 1000 hr	-20	%	
302°F, 168 hr	-20	%	
Change in Tensile Strain at Break in Air - Across Flow			ISO 188
275°F, 1000 hr	-20	%	
302°F, 168 hr	-20	%	

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Aging	Nominal Value	Unit	Test Method
Change in Durometer Hardness in Air			ASTM D573
Shore D, 275°F, 1000 hr	2.0		
Shore D, 302°F, 168 hr	2.0		
Change in Shore Hardness in Air			ISO 188
Shore D, 275°F, 1000 hr	2.0		
Shore D, 302°F, 168 hr	2.0		
Change in Volume (257°F, 70 hr, in IRM 903 Oil)	47	%	ASTM D471
Change in Volume (257°F, 70 hr, in IRM 903 Oil)	47	%	ISO 1817
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (0.04 in, All Colors)	HB		UL 94
Additional Information	**Nominal Value**	**Unit**	**Test Method**
Apparent Shear Viscosity - Capillary, @ 206/s			
392°F	370	Pa·s	ASTM D3835
392°F	370	Pa·s	ISO 11443

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	180	°F
Drying Time	3.0	hr
Rear Temperature	350 to 420	°F
Middle Temperature	350 to 420	°F
Front Temperature	350 to 420	°F
Nozzle Temperature	370 to 430	°F
Processing (Melt) Temp	365 to 428	°F
Mold Temperature	50 to 150	°F
Back Pressure	10.0 to 150	psi
Screw Speed	100 to 200	rpm
Screw L/D Ratio	20.0:1.0	
Extrusion	**Nominal Value**	**Unit**
Drying Temperature	180	°F
Drying Time	3.0	hr
Cylinder Zone 1 Temp.	360 to 400	°F
Cylinder Zone 2 Temp.	360 to 400	°F
Cylinder Zone 3 Temp.	370 to 410	°F
Cylinder Zone 4 Temp.	370 to 410	°F
Melt Temperature	380 to 420	°F
Die Temperature	380 to 420	°F
Take-Off Roll	70 to 120	°F

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Extrusion Notes
Screen Pack: 20 to 60 mesh
Compression Ratio: 3:1

Notes

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

[2] Method Ba, Angle (Unnicked)