Sarlink® TPV 4139D

Teknor Apex Company - Thermoplastic Vulcanizate

Saturday, September 14, 2024

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	• CHRYSLER MS-AR-100 FGN Color: Black • CHRYSLER MS-AR-100 FGN Color: Natural • 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 • PSA Peugeot-Citroën B62 0300 version G Color: Black • 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	0.948	g/cm³	ASTM D792
Density	0.950	g/cm³	ISO 1183
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress			ASTM D412
Across Flow : 100% Strain	8.89	MPa	
Flow : 100% Strain	13.3	MPa	

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Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ISO 37
Across Flow : 100% Strain	8.90	MPa	
Flow : 100% Strain	13.3	MPa	
Tensile Strength			ASTM D412
Across Flow : Break	19.0	MPa	
Flow : Break	18.0	MPa	
Tensile Stress			ISO 37
Across Flow : Break	19.0	MPa	
Flow : Break	18.0	MPa	
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	96.3	kN/m	ASTM D624
Tear Strength - Flow [2]	97.0	kN/m	ISO 34-1
Compression Set			ASTM D395
23°C, 22 hr	46	%	
70°C, 22 hr	56	%	
125°C, 70 hr	80	%	
Compression Set			ISO 815
23°C, 22 hr	46	%	
70°C, 22 hr	56	%	
125°C, 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	100	°C	UL 746B
RTI Imp	100	°C	UL 746B
RTI Str	100	°C	UL 746B

Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air - Across Flow			ASTM D573
135°C, 1000 hr	-15	%	
100% Strain, 135°C, 1000 hr	20	%	
150°C, 168 hr	-15	%	
100% Strain, 150°C, 168 hr	15	%	
Change in Tensile Strength in Air - Across Flow			ISO 188
135°C, 1000 hr	-15	%	
100% Strain 135°C, 1000 hr	20	%	
150°C, 168 hr	-15	%	
100% Strain 150°C, 168 hr	15	%	

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Aging	Nominal Value	Unit	Test Method
Change in Ultimate Elongation in Air - Across Flow			ASTM D573
135°C, 1000 hr	-20	%	
150°C, 168 hr	-20	%	
Change in Tensile Strain at Break in Air - Across Flow			ISO 188
135°C, 1000 hr	-20	%	
150°C, 168 hr	-20	%	
Change in Durometer Hardness in Air			ASTM D573
Shore D, 135°C, 1000 hr	2.0		
Shore D, 150°C, 168 hr	2.0		
Change in Shore Hardness in Air			ISO 188
Shore D, 135°C, 1000 hr	2.0		
Shore D, 150°C, 168 hr	2.0		
Change in Volume (125°C, 70 hr, in IRM 903 Oil)	47	%	ASTM D471
Change in Volume (125°C, 70 hr, in IRM 903 Oil)	47	%	ISO 1817

Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.0 mm, All Colors)	HB		UL 94

Additional Information	Nominal Value	Unit	Test Method
Apparent Shear Viscosity - Capillary, @ 206/s			
200°C	370	Pa·s	ASTM D3835
200°C	370	Pa·s	ISO 11443

Legal Statement

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	82	°C
Drying Time	3.0	hr
Rear Temperature	177 to 216	°C
Middle Temperature	177 to 216	°C
Front Temperature	177 to 216	°C
Nozzle Temperature	188 to 221	°C
Processing (Melt) Temp	185 to 220	°C
Mold Temperature	10 to 66	°C
Back Pressure	0.0689 to 1.03	MPa
Screw Speed	100 to 200	rpm
Screw L/D Ratio	20.0:1.0	

Extrusion	Nominal Value	Unit
Drying Temperature	82	°C
Drying Time	3.0	hr
Cylinder Zone 1 Temp.	182 to 204	°C
Cylinder Zone 2 Temp.	182 to 204	°C
Cylinder Zone 3 Temp.	188 to 210	°C
Cylinder Zone 4 Temp.	188 to 210	°C

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Extrusion	Nominal Value	Unit
Melt Temperature	193 to 216	°C
Die Temperature	193 to 216	°C
Take-Off Roll	21 to 49	°C

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)

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