

# Sarlink® TPV 4149D

Teknor Apex Company - Thermoplastic Vulcanizate

Friday, October 7, 2016

## 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® 4149D 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	• Alcohol Resistant • Chemical Resistant • Fatigue Resistant • Good Adhesion • Good Moldability	• Good Processability • Good Surface Finish • Heat Aging Resistant • High Elasticity • High Hardness	• High Melt Stability • Low Density • Low Specific Gravity • Medium Heat Resistance • Resilient
Uses	• Appliance Components • Automotive Applications • Automotive Exterior Parts • Automotive Interior Parts • Automotive Under the Hood	• Blow Molding Applications • Grommets • Hose • Plugs • Profiles	• Rubber Replacement • Seals • Valves/Valve Parts • White Goods & Small Appliances
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-AR-100 GGN Color: Black • CHRYSLER MS-AR-100 GGN Color: Natural	• GM GMP.E/P.007 Color: Black • GM GMP.E/P.007 Color: Natural	• GM GMW15813 Type 10 Color: Black • GM GMW15813 Type 10 Color: Natural
Appearance	• Black	• Natural Color	• Opaque
Forms	• Pellets		
Processing Method	• Blow Molding	• Extrusion	• Injection Molding

## ASTM & ISO Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.938	g/cm <sup>3</sup>	ASTM D792
Density	0.940	g/cm <sup>3</sup>	ISO 1183
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ASTM D412
Across Flow : 100% Strain	13.0	MPa	
Flow : 100% Strain	18.0	MPa	
Tensile Stress			ISO 37
Across Flow : 100% Strain	13.0	MPa	
Flow : 100% Strain	18.0	MPa	
Tensile Strength			ASTM D412
Across Flow : Break	23.1	MPa	
Flow : Break	21.6	MPa	
Tensile Stress			ISO 37
Across Flow : Break	23.1	MPa	
Flow : Break	21.6	MPa	
Tensile Elongation			ASTM D412
Across Flow : Break	740	%	
Flow : Break	420	%	

Revision Date: 6/1/2016

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<b>Elastomers</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Tensile Elongation			ISO 37
Across Flow : Break	740	%	
Flow : Break	420	%	
Tear Strength - Across Flow	142	kN/m	ASTM D624
Tear Strength - Across Flow <sup>2</sup>	140	kN/m	ISO 34-1
Compression Set			ASTM D395
23°C, 22 hr	55	%	
70°C, 22 hr	64	%	
125°C, 70 hr	85	%	
Compression Set			ISO 815
23°C, 22 hr	55	%	
70°C, 22 hr	64	%	
125°C, 70 hr	85	%	
<b>Hardness</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Durometer Hardness			ASTM D2240
Shore D, 5 sec, Extruded	47		
Shore D, 5 sec, Injection Molded	51		
Shore Hardness			ISO 868
Shore D, 5 sec, Extruded	47		
Shore D, 5 sec, Injection Molded	51		
<b>Aging</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Change in Tensile Strength in Air - Across Flow			ASTM D573
135°C, 1000 hr	-8.0	%	
100% Strain, 135°C, 1000 hr	25	%	
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	-8.0	%	
100% Strain 135°C, 1000 hr	25	%	
150°C, 168 hr	-15	%	
100% Strain 150°C, 168 hr	15	%	
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)	38	%	ASTM D471
Change in Volume (125°C, 70 hr, in IRM 903 Oil)	38	%	ISO 1817
<b>Additional Information</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Apparent Shear Viscosity - Capillary, @ 206/s			
200°C	440	Pa·s	ISO 11443
200°C	440	Pa·s	ASTM D3835

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### Legal Statement

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### Processing Information

Injection	Nominal Value	Unit
Drying Temperature	82	°C
Drying Time	3.0	hr
Rear Temperature	180 to 215	°C
Middle Temperature	180 to 215	°C
Front Temperature	180 to 215	°C
Nozzle Temperature	187 to 220	°C
Processing (Melt) Temp	185 to 220	°C
Mold Temperature	10 to 55	°C
Back Pressure	0.100 to 1.00	MPa
Screw Speed	100 to 200	rpm

Extrusion	Nominal Value	Unit
Drying Temperature	82	°C
Drying Time	3.0	hr
Cylinder Zone 1 Temp.	180 to 200	°C
Cylinder Zone 2 Temp.	180 to 205	°C
Cylinder Zone 3 Temp.	187 to 210	°C
Cylinder Zone 4 Temp.	187 to 210	°C
Melt Temperature	195 to 215	°C
Die Temperature	195 to 215	°C
Take-Off Roll	20 to 50	°C

### Extrusion Notes

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

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Method Ba, Angle (Unnicked)

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