TEKNOR APEX

Sarlink® TPV 4175

Teknor Apex Company - Thermoplastic Vulcanizate

Tuesday, November 22, 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® 4175 is a low density, medium hardness thermoplastic vulcanizate that exhibits excellent compression set, flex fatigue, and high and low temperature performance. The material 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 • Excellent Elastic Recovery • Fatigue Resistant • Good Adhesion • Good Flexibility	• Good Melt Strength • Good Moldability • Good Processability • Good Surface Finish • High Melt Stability	• Low Density • Low Specific Gravity • Medium Hardness • Medium Heat Resistance • Resilient
Uses	• Agricultural Applications • Appliance Components • Automotive Applications • Automotive Interior Parts • Automotive Under the Hood	• Blow Molding Applications • Gaskets • Hose • Industrial Applications • Pipe Seals	• Profiles • Rubber Replacement • Seals • White Goods & Small Appliances
Agency Ratings	• UL 94		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-AR-100 CGN Color: Black • CHRYSLER MS-AR-100 CGN Color: Natural • FORD WSD-M2D379-A6 Color: Black • FORD WSD-M2D380-A1 Color: Black • FORD WSD-M2D380-A1 Color: Natural • GM GMP.E/P.003 Color: Black • GM GMP.E/P.003 Color: Natural • GM GMW15813 Type 6 Color: Black • GM GMW15813 Type 6 Color: Natural • GM QK 3523 L Color: Black • GM QK 3523 L Color: Natural • PSA Peugeot-Citroën B62 0300 version G Color: Black		
Appearance	• Black	• Natural Color	• Opaque
Forms	• Pellets		
Processing Method	• Blow Molding	• Extrusion	• Injection Molding

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.958	g/cm³	ASTM D792
Density	0.960	g/cm³	ISO 1183
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress			
Across Flow : 100% Strain	3.30	MPa	ASTM D412
Across Flow : 100% Strain	3.30	MPa	ISO 37
Flow : 100% Strain	5.30	MPa	ASTM D412
Flow : 100% Strain	5.30	MPa	ISO 37

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Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
Across Flow : Break	8.50	MPa	ASTM D412
Across Flow : Break	8.50	MPa	ISO 37
Flow : Break	7.20	MPa	ASTM D412
Flow : Break	7.20	MPa	ISO 37
Tensile Elongation			
Across Flow : Break	590	%	ASTM D412
Across Flow : Break	590	%	ISO 37
Flow : Break	300	%	ASTM D412
Flow : Break	300	%	ISO 37
Tear Strength - Across Flow			
--	39	kN/m	ASTM D624
-- [2]	39	kN/m	ISO 34-1
Compression Set			
23°C, 22 hr	22	%	ASTM D395
23°C, 22 hr	22	%	ISO 815
70°C, 22 hr	31	%	ASTM D395
70°C, 22 hr	31	%	ISO 815
125°C, 70 hr	45	%	ASTM D395
125°C, 70 hr	45	%	ISO 815

Hardness	Nominal Value	Unit	Test Method
Shore Hardness			
Shore A, 5 sec, Extruded	72		ASTM D2240
Shore A, 5 sec, Extruded	72		ISO 868
Shore A, 5 sec, Injection Molded	75		ASTM D2240
Shore A, 5 sec, Injection Molded	75		ISO 868

Thermal	Nominal Value	Unit	Test Method
RTI Elec	100	°C	UL 746
RTI Imp	65.0	°C	UL 746
RTI Str	100	°C	UL 746

Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air - Across Flow			
135°C, 1000 hr	-2.0	%	ISO 188
135°C, 1000 hr	-2.0	%	ASTM D573
150°C, 168 hr	-9.0	%	ISO 188
150°C, 168 hr	-9.0	%	ASTM D573
100% Strain 150°C, 168 hr	3.0	%	ISO 188
100% Strain 150°C, 168 hr	3.0	%	ASTM D573
100% Strain 150°C, 1000 hr	5.0	%	ASTM D573
100% Strain 150°C, 1000 hr	5.0	%	ISO 188
Change in Tensile Strain at Break in Air - Across Flow			
135°C, 1000 hr	-5.0	%	ASTM D573
135°C, 1000 hr	-5.0	%	ISO 188
150°C, 168 hr	-16	%	ASTM D573
150°C, 168 hr	-16	%	ISO 188

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Aging	Nominal Value	Unit	Test Method
Change in Shore Hardness in Air			
Shore A, 135°C, 1000 hr	2.0		ASTM D573
Shore A, 135°C, 1000 hr	2.0		ISO 188
Shore A, 150°C, 168 hr	3.0		ASTM D573
Shore A, 150°C, 168 hr	3.0		ISO 188
Change in Volume			
125°C, 70 hr, in IRM 903 Oil	78	%	ASTM D471
125°C, 70 hr, in IRM 903 Oil	78	%	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	340	Pa·s	ASTM D3835
200°C	340	Pa·s	ISO 11443

Legal Statement

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

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Notes

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

[2] Method Ba, Angle (Unnicked)

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