Sarlink® TPV 4190

Teknor Apex Company - Thermoplastic Vulcanizate

Thursday, June 29, 2017

General Information

Product Description

SARLINK® TPV 4100 series are engineered materials designed primarily for demanding automotive and industrial applications. Available in both natural and black, SARLINK® 4190 is a low density, higher hardness thermoplastic vulcanizates with excellent flex fatigue resistance, heat aging, improved elasticity and resilience. SARLINK® 4190 can be used in injection molded parts, sheet and profile extrusions such as weather-stripping and expansion joints, and can also be blow molded into boots and ducts.

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 • Heat Aging Resistant • High Hardness • High Melt Stability	• Low Density • Low Specific Gravity • Low Temperature Flexibility • Medium Heat Resistance • Resilient
Uses	• Agricultural Applications • Appliance Components • Automotive Applications • Automotive Exterior Parts • Automotive Interior Parts	• Automotive Under the Hood • Blow Molding Applications • Gaskets • Industrial Applications • Pipe Seals	• Profiles • Rubber Replacement • Sheet • Weatherstripping • White Goods & Small Appliances
Agency Ratings	• UL 94		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-AR-100 DGN Color: Black • CHRYSLER MS-AR-100 DGN Color: Natural • FORD WSD-M2D382-A1 Color: Black • FORD WSD-M2D382-A1 Color: Natural	• GM GMP.E/P.005 Color: Black • GM GMP.E/P.005 Color: Natural • GM GMW15813 Type 8 Color: Black • GM GMW15813 Type 8 Color: Natural	• GM QK 3526 Type 6 Color: Black • GM QK 3526 Type 6 Color: Natural • HONDA Unspecified Color: Black
Appearance	• Opaque		
Forms	• Pellets		
Processing Method	• Blow Molding	• Extrusion	• Injection Molding

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.950		ASTM D792
Density	0.950	g/cm³	ISO 1183
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress			
Across Flow : 100% Strain	972	psi	ASTM D412
Across Flow : 100% Strain	972	psi	ISO 37
Flow : 100% Strain	1480	psi	ASTM D412
Flow : 100% Strain	1480	psi	ISO 37
Tensile Stress			
Across Flow : Break	2100	psi	ASTM D412
Across Flow : Break	2100	psi	ISO 37
Flow : Break	1970	psi	ASTM D412
Flow : Break	1970	psi	ISO 37

Revision Date: 6/1/2016

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Teknor Apex Company - Thermoplastic Vulcanizate

Elastomers	Nominal Value	Unit	Test Method
Tensile Elongation			
Across Flow : Break	650	%	ASTM D412
Across Flow : Break	650	%	ISO 37
Flow : Break	380	%	ASTM D412
Flow : Break	380	%	ISO 37
Tear Strength - Across Flow			
--	410	lbf/in	ASTM D624
-- [2]	410	lbf/in	ISO 34-1
Compression Set			
73°F, 22 hr	36	%	ASTM D395
73°F, 22 hr	36	%	ISO 815
158°F, 22 hr	48	%	ASTM D395
158°F, 22 hr	48	%	ISO 815
257°F, 70 hr	72	%	ASTM D395
257°F, 70 hr	72	%	ISO 815

Hardness	Nominal Value	Unit	Test Method
Shore Hardness			
Shore A, 5 sec, Extruded	86		ASTM D2240
Shore A, 5 sec, Extruded	86		ISO 868
Shore A, 5 sec, Injection Molded	90		ASTM D2240
Shore A, 5 sec, Injection Molded	90		ISO 868

Thermal	Nominal Value	Unit	Test Method
RTI Elec	212	°F	UL 746
RTI Imp	149	°F	UL 746
RTI Str	212	°F	UL 746

Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air - Across Flow			ASTM D573
275°F, 1000 hr	-11	%	
100% Strain, 275°F, 1000 hr	15	%	
302°F, 168 hr	-8.0	%	
100% Strain, 302°F, 168 hr	10	%	
Change in Tensile Strength in Air - Across Flow			ISO 188
275°F, 1000 hr	-11	%	
100% Strain 275°F, 1000 hr	15	%	
302°F, 168 hr	-8.0	%	
100% Strain 302°F, 168 hr	10	%	
Change in Ultimate Elongation in Air - Across Flow			ASTM D573
275°F, 1000 hr	-16	%	
302°F, 168 hr	-17	%	
Change in Tensile Strain at Break in Air - Across Flow			ISO 188
275°F, 1000 hr	-16	%	
302°F, 168 hr	-17	%	
Change in Durometer Hardness in Air			ASTM D573
Shore A, 275°F, 1000 hr	3.0		
Shore A, 302°F, 168 hr	3.0		
Change in Shore Hardness in Air			ISO 188
Shore A, 275°F, 1000 hr	3.0		
Shore A, 302°F, 168 hr	3.0		
Change in Volume (257°F, 70 hr, in IRM 903 Oil)	54	%	ASTM D471

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Aging	Nominal Value	Unit	Test Method
Change in Volume (257°F, 70 hr, in IRM 903 Oil)	54	%	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	340	Pa·s	ISO 11443
392°F	340	Pa·s	ASTM D3835

Legal Statement

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	180	°F
Drying Time	3.0	hr
Rear Temperature	356 to 419	°F
Middle Temperature	356 to 419	°F
Front Temperature	356 to 419	°F
Nozzle Temperature	369 to 428	°F
Processing (Melt) Temp	365 to 428	°F
Mold Temperature	50 to 131	°F
Back Pressure	14.5 to 145	psi
Screw Speed	100 to 200	rpm
Extrusion	**Nominal Value**	**Unit**
Drying Temperature	180	°F
Drying Time	3.0	hr
Cylinder Zone 1 Temp.	356 to 392	°F
Cylinder Zone 2 Temp.	356 to 401	°F
Cylinder Zone 3 Temp.	369 to 410	°F
Cylinder Zone 4 Temp.	369 to 410	°F
Melt Temperature	383 to 419	°F
Die Temperature	383 to 419	°F
Take-Off Roll	68 to 122	°F

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] Method Ba, Angle (Unnicked)

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