



Sarlink® TPV 4190

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 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	• 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 • STELLANTIS MS-AR-100 EGN Color: Black • STELLANTIS MS-AR-100 EGN Color: Natural
UL File Number	• QMFZ2.E54709		
Appearance	• Black	• Natural Color	• Opaque
Forms	• Pellets		
Processing Method	• Blow Molding	• Extrusion	• Injection Molding

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.950		ASTM D792
Density	0.950	g/cm ³	ISO 1183
Mechanical	Nominal Value	Unit	Test Method
Poisson's Ratio (73°F)	0.43		ASTM E132
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
Across Flow : 100% Strain	972	psi	ISO 37
Across Flow : 100% Strain	972	psi	ASTM D412
Flow : 100% Strain	1480	psi	ISO 37
Flow : 100% Strain	1480	psi	ASTM D412

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Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
Across Flow : Break	2100	psi	ISO 37
Across Flow : Break	2100	psi	ASTM D412
Flow : Break	1970	psi	ISO 37
Flow : Break	1970	psi	ASTM D412
Tensile Elongation			
Across Flow : Break	650	%	ISO 37
Across Flow : Break	650	%	ASTM D412
Flow : Break	380	%	ISO 37
Flow : Break	380	%	ASTM D412
Tear Strength - Across Flow			
--	410	lbf/in	ASTM D624
-- ²	405	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	%	ISO 815
158°F, 22 hr	48	%	ASTM D395
257°F, 70 hr	72	%	ISO 815
257°F, 70 hr	72	%	ASTM D395
Hardness	Nominal Value	Unit	Test Method
Shore Hardness			
Shore A, 5 sec, Extruded	86		ISO 868
Shore A, 5 sec, Extruded	86		ASTM D2240
Shore A, 5 sec, Injection Molded	90		ISO 868
Shore A, 5 sec, Injection Molded	90		ASTM D2240
Thermal	Nominal Value	Unit	Test Method
CLTE - Flow	1.5E-4	in/in/°F	ASTM E831
RTI Elec	212	°F	UL 746B
RTI Imp	149	°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	-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	%	

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Aging	Nominal Value	Unit	Test Method
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
Change in Volume (257°F, 70 hr, in IRM 903 Oil)	54	%	ISO 1817
Continuous Upper Temperature Resistance	275	°F	SAE J2236
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength (0.0787 in)	520	V/mil	ASTM D149
Dielectric Constant (73°F, 0.0787 in)	2.39		ASTM D150
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	ASTM D3835
392°F	340	Pa·s	ISO 11443

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	180	°F
Drying Time	3.0	hr
Rear Temperature	280 to 320	°F
Middle Temperature	330 to 380	°F
Front Temperature	350 to 440	°F
Nozzle Temperature	360 to 440	°F
Processing (Melt) Temp	360 to 440	°F
Mold Temperature	60 to 130	°F
Injection Rate	Fast	
Back Pressure	50.0 to 150	psi
Screw Speed	25 to 75	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

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Extrusion	Nominal Value	Unit
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)