

Sarlink® TPV 4190

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 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 EGN Color: Black • CHRYSLER MS-AR-100 EGN Color: Natural • FORD WSD-M2D382-A1 Color: Black • FORD WSD-M2D382-A1 Color: Natural	• GM GMPE/P.005 Color: Black • GM GMPE/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
UL File Number	• QMFZ2.E54709		
Appearance	• Black	• Natural Color	• Opaque
Forms	• Pellets		
Processing Method	• Blow Molding	• Extrusion	• Injection Molding

ASTM & ISO Properties¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.948	g/cm ³	ASTM D792
Density	0.950	g/cm ³	ISO 1183
Mechanical	Nominal Value	Unit	Test Method
Poisson's Ratio (23°C)	0.43		ASTM E132
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
Across Flow : 100% Strain	6.70	MPa	ISO 37
Across Flow : 100% Strain	6.70	MPa	ASTM D412
Flow : 100% Strain	10.2	MPa	ISO 37
Flow : 100% Strain	10.2	MPa	ASTM D412

Revision Date: 6/21/2018

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Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
Across Flow : Break	14.5	MPa	ISO 37
Across Flow : Break	14.5	MPa	ASTM D412
Flow : Break	13.6	MPa	ISO 37
Flow : Break	13.6	MPa	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			
--	71.8	kN/m	ASTM D624
-- ²	71.0	kN/m	ISO 34-1
Compression Set			
23°C, 22 hr	36	%	ASTM D395
23°C, 22 hr	36	%	ISO 815
70°C, 22 hr	48	%	ISO 815
70°C, 22 hr	48	%	ASTM D395
125°C, 70 hr	72	%	ISO 815
125°C, 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	2.7E-4	cm/cm/°C	ASTM E831
RTI Elec	100	°C	UL 746B
RTI Imp	65.0	°C	UL 746B
RTI Str	100	°C	UL 746B
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air - Across Flow			
135°C, 1000 hr	-11	%	ASTM D573
100% Strain, 135°C, 1000 hr	15	%	
150°C, 168 hr	-8.0	%	
100% Strain, 150°C, 168 hr	10	%	
Change in Tensile Strength in Air - Across Flow			
135°C, 1000 hr	-11	%	ISO 188
100% Strain 135°C, 1000 hr	15	%	
150°C, 168 hr	-8.0	%	
100% Strain 150°C, 168 hr	10	%	
Change in Ultimate Elongation in Air - Across Flow			
135°C, 1000 hr	-16	%	ASTM D573
150°C, 168 hr	-17	%	
Change in Tensile Strain at Break in Air - Across Flow			
135°C, 1000 hr	-16	%	ISO 188
150°C, 168 hr	-17	%	

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Aging	Nominal Value	Unit	Test Method
Change in Durometer Hardness in Air			ASTM D573
Shore A, 135°C, 1000 hr	3.0		
Shore A, 150°C, 168 hr	3.0		
Change in Shore Hardness in Air			ISO 188
Shore A, 135°C, 1000 hr	3.0		
Shore A, 150°C, 168 hr	3.0		
Change in Volume (125°C, 70 hr, in IRM 903 Oil)	54	%	ASTM D471
Change in Volume (125°C, 70 hr, in IRM 903 Oil)	54	%	ISO 1817
Continuous Upper Temperature Resistance	135	°C	SAE J2236
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength (2.00 mm)	21	kV/mm	ASTM D149
Dielectric Constant (23°C, 2.00 mm)	2.39		ASTM D150
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

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Processing Information

Injection	Nominal Value	Unit
Drying Temperature	82	°C
Drying Time	3.0	hr
Rear Temperature	138 to 160	°C
Middle Temperature	166 to 193	°C
Front Temperature	177 to 227	°C
Nozzle Temperature	182 to 227	°C
Processing (Melt) Temp	182 to 227	°C
Mold Temperature	16 to 54	°C
Injection Rate	Fast	
Back Pressure	0.345 to 1.03	MPa
Screw Speed	25 to 75	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

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Extrusion	Nominal Value	Unit
Take-Off Roll	20 to 50	°C

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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