

Sarlink® TPV 4190

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 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	0.948	g/cm ³	ASTM D792
Density	0.950	g/cm ³	ISO 1183
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
Across Flow : 100% Strain	6.70	MPa	ASTM D412
Across Flow : 100% Strain	6.70	MPa	ISO 37
Flow : 100% Strain	10.2	MPa	ASTM D412
Flow : 100% Strain	10.2	MPa	ISO 37
Tensile Stress			
Across Flow : Break	14.5	MPa	ASTM D412
Across Flow : Break	14.5	MPa	ISO 37
Flow : Break	13.6	MPa	ASTM D412
Flow : Break	13.6	MPa	ISO 37

Revision Date: 6/1/2016

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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			
--	72	kN/m	ASTM D624
-- ²	71	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	%	ASTM D395
70°C, 22 hr	48	%	ISO 815
125°C, 70 hr	72	%	ASTM D395
125°C, 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	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			ASTM D573
135°C, 1000 hr	-11	%	
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			ISO 188
135°C, 1000 hr	-11	%	
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			ASTM D573
135°C, 1000 hr	-16	%	
150°C, 168 hr	-17	%	
Change in Tensile Strain at Break in Air - Across Flow			ISO 188
135°C, 1000 hr	-16	%	
150°C, 168 hr	-17	%	
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

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Aging	Nominal Value	Unit	Test Method
Change in Volume (125°C, 70 hr, in IRM 903 Oil)	54	%	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	ISO 11443
200°C	340	Pa·s	ASTM D3835

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

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

² Method Ba, Angle (Unnicked)

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Teknor Apex Company Corporate Headquarters

*In U.S. for Vinyls, TPEs, Colorants,
Engineered Thermoplastics (Chem Polymer)*
505 Central Avenue
Pawtucket, Rhode Island 02861 U.S.

Phone: 401-725-8000
Fax: 401-725-8095
Toll Free (U.S. only) 800-556-3864

www.teknorapex.com
info@teknorapex.com

Teknor Apex U.K. Ltd.

Tat Bank Road
Oldbury, West Midlands B69 4NH England

Phone: (44) 121-665-2100
Fax: (44) 121-544-5530

www.teknorapex.com
etpsales@teknorapex.co.uk

Teknor Apex (Suzhou) Advanced Polymer Compounds Co. Pte. Ltd.

No. 78 Ping Sheng Road
Suzhou Industrial Park
Jiangsu, China 215126

Phone: (86) 512-6287-1550
Fax: (86) 512-6288-8371

www.teknorapex.com
infotaap@teknorapex.com

Teknor Apex Asia Pacific PTE. LTD.

41 Shipyard Road
Singapore 628134

Phone: (65) 6265-2544
Fax: (65) 6265-1821

www.teknorapex.com
infotaap@teknorapex.com

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