



Sarlink® TPV 4165

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 black and natural, SARLINK® 4165 is a low density, medium hardness thermoplastic vulcanizate that exhibits excellent compression set, flex fatigue, 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 Moldability • Good Processability • Good Surface Finish • High Melt Stability • Low Density	• Low Specific Gravity • Medium Hardness • Medium Heat Resistance • Resilient
Uses	• Appliance Components • Automotive Applications • Automotive Exterior Parts • Automotive Interior Parts • Automotive Under the Hood • Blow Molding Applications	• Gaskets • Grommets • Hose • Industrial Applications • O-rings • Pipe Seals	• Plugs • Rubber Replacement • Seals • Tubing • White Goods & Small Appliances
Agency Ratings	• UL QMFZ2	• UL QMFZ8	
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• BMW Unspecified Color: Black • FORD WSD-M2D378-A6 Color: Black • FORD WSD-M2D379-A1 Color: Black • FORD WSD-M2D379-A1 Color: Natural	• GM GMP.E/P.002 Color: Black • GM GMP.E/P.002 Color: Natural • GM GMW15813 Type 5 Color: Black • GM GMW15813 Type 5 Color: Natural	• GM QK 3521 Type 1 Color: Black • GM QK 3521 Type 1 Color: Natural • STELLANTIS MS-AR-100 BGN Color: Black • STELLANTIS MS-AR-100 BGN 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	0.960		ASTM D792
Density	0.960	g/cm ³	ISO 1183
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
Across Flow : 100% Strain	363	psi	ISO 37
Across Flow : 100% Strain	363	psi	ASTM D412
Flow : 100% Strain	609	psi	ISO 37
Flow : 100% Strain	609	psi	ASTM D412

Sarlink® TPV 4165

Teknor Apex Company - Thermoplastic Vulcanizate

Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
Across Flow : Break	986	psi	ISO 37
Across Flow : Break	986	psi	ASTM D412
Flow : Break	841	psi	ISO 37
Flow : Break	841	psi	ASTM D412
Tensile Elongation			
Across Flow : Break	570	%	ISO 37
Across Flow : Break	570	%	ASTM D412
Flow : Break	280	%	ISO 37
Flow : Break	280	%	ASTM D412
Tear Strength - Across Flow			
--	166	lbf/in	ASTM D624
-- ²	166	lbf/in	ISO 34-1
Compression Set			
73°F, 22 hr	17	%	ISO 815
73°F, 22 hr	17	%	ASTM D395
158°F, 22 hr	27	%	ISO 815
158°F, 22 hr	27	%	ASTM D395
257°F, 70 hr	40	%	ISO 815
257°F, 70 hr	40	%	ASTM D395
Hardness	Nominal Value	Unit	Test Method
Shore Hardness			
Shore A, 5 sec, Extruded	63		ISO 868
Shore A, 5 sec, Extruded	63		ASTM D2240
Shore A, 5 sec, Injection Molded	65		ISO 868
Shore A, 5 sec, Injection Molded	65		ASTM D2240
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-85.0	°F	ASTM D746
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			
275°F, 1000 hr	-9.0	%	ISO 188
275°F, 1000 hr	-9.0	%	ASTM D573
302°F, 168 hr	-11	%	ISO 188
302°F, 168 hr	-11	%	ASTM D573
100% Strain 302°F, 168 hr	0.0	%	ISO 188
100% Strain 302°F, 168 hr	0.0	%	ASTM D573
100% Strain 302°F, 1000 hr	4.0	%	ISO 188
100% Strain 302°F, 1000 hr	4.0	%	ASTM D573
Change in Tensile Strain at Break in Air - Across Flow			
275°F, 1000 hr	-8.0	%	ISO 188
275°F, 1000 hr	-8.0	%	ASTM D573
302°F, 168 hr	-11	%	ISO 188
302°F, 168 hr	-11	%	ASTM D573

Sarlink® TPV 4165

Teknor Apex Company - Thermoplastic Vulcanizate

Aging	Nominal Value	Unit	Test Method
Change in Shore Hardness in Air			
Shore A, 275°F, 1000 hr	2.0		ISO 188
Shore A, 275°F, 1000 hr	2.0		ASTM D573
Shore A, 302°F, 168 hr	2.0		ISO 188
Shore A, 302°F, 168 hr	2.0		ASTM D573
Change in Volume			
257°F, 70 hr, in IRM 903 Oil	83 %		ISO 1817
257°F, 70 hr, in IRM 903 Oil	83 %		ASTM D471
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+16	ohms·cm	ASTM D257
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

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)