Sarlink® TPV 4145

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. SARLINK® 4145 is a low density, low 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 Compression Set	• Low Density • Low Hardness • Low Specific Gravity • Medium Heat Resistance • Resilient
Uses	• Appliance Components • Automotive Applications • Automotive Exterior Parts • Automotive Interior Parts • Automotive Under the Hood • Blow Molding Applications	• Constant Velocity Joint Boots • Flexible Grips • Gaskets • Grommets • Hose • Industrial Applications	• O-rings • Pipe Seals • Profiles • Rubber Replacement • Seals • White Goods & Small Appliances
RoHS Compliance	• RoHS Compliant		
Appearance	• Black	• Natural Color	• Opaque
Forms	• Pellets		
Processing Method	• Blow Molding • Extrusion	• Injection Molding • Profile Extrusion	

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.958	g/cm³	ASTM D792
Density	0.960	g/cm³	ISO 1183
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress			ASTM D412
Across Flow : 100% Strain	1.30	MPa	
Flow : 100% Strain	2.60	MPa	
Tensile Stress			ISO 37
Across Flow : 100% Strain	1.30	MPa	
Flow : 100% Strain	2.60	MPa	
Tensile Strength			ASTM D412
Across Flow : Break	4.30	MPa	
Flow : Break	3.10	MPa	
Tensile Stress			ISO 37
Across Flow : Break	4.30	MPa	
Flow : Break	3.10	MPa	
Tensile Elongation			ASTM D412
Across Flow : Break	550	%	
Flow : Break	180	%	

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Elastomers	Nominal Value	Unit	Test Method
Tensile Elongation			ISO 37
Across Flow : Break	550	%	
Flow : Break	180	%	
Tear Strength - Across Flow	19.3	kN/m	ASTM D624
Tear Strength - Across Flow [2]	20.0	kN/m	ISO 34-1
Compression Set			ASTM D395
23°C, 22 hr	11	%	
70°C, 22 hr	26	%	
125°C, 70 hr	35	%	
Compression Set			ISO 815
23°C, 22 hr	11	%	
70°C, 22 hr	26	%	
125°C, 70 hr	35	%	

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240
Shore A, 5 sec, Extruded	45		
Shore A, 5 sec, Injection Molded	48		
Shore Hardness			ISO 868
Shore A, 5 sec, Extruded	45		
Shore A, 5 sec, Injection Molded	48		

Thermal	Nominal Value	Unit	Test Method
RTI Elec	50.0	°C	UL 746B
RTI Imp	50.0	°C	UL 746B
RTI Str	50.0	°C	UL 746B

Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air - Across Flow			ASTM D573
135°C, 1000 hr	-2.0	%	
100% Strain, 135°C, 1000 hr	0.0	%	
150°C, 168 hr	-5.0	%	
100% Strain, 150°C, 168 hr	-3.0	%	
Change in Tensile Strength in Air - Across Flow			ISO 188
135°C, 1000 hr	-2.0	%	
100% Strain 135°C, 1000 hr	0.0	%	
150°C, 168 hr	-5.0	%	
100% Strain 150°C, 168 hr	-3.0	%	
Change in Ultimate Elongation in Air - Across Flow			ASTM D573
135°C, 1000 hr	13	%	
150°C, 168 hr	6.0	%	
Change in Tensile Strain at Break in Air - Across Flow			ISO 188
135°C, 1000 hr	13	%	
150°C, 168 hr	6.0	%	
Change in Durometer Hardness in Air			ASTM D573
Shore A, 135°C, 1000 hr	2.0		
Shore A, 150°C, 168 hr	0.0		
Change in Shore Hardness in Air			ISO 188
Shore A, 135°C, 1000 hr	2.0		
Shore A, 150°C, 168 hr	0.0		
Change in Volume (125°C, 70 hr, in IRM 903 Oil)	110	%	ASTM D471

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Aging	Nominal Value	Unit	Test Method
Change in Volume (125°C, 70 hr, in IRM 903 Oil)	110	%	ISO 1817

Additional Information	Nominal Value	Unit	Test Method
Apparent Shear Viscosity - Capillary, @ 206/s			
200°C	320	Pa·s	ASTM D3835
200°C	320	Pa·s	ISO 11443

Legal Statement

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	82	°C
Drying Time	3.0	hr
Rear Temperature	177 to 216	°C
Middle Temperature	177 to 216	°C
Front Temperature	177 to 216	°C
Nozzle Temperature	188 to 221	°C
Processing (Melt) Temp	182 to 221	°C
Mold Temperature	10 to 66	°C
Back Pressure	0.0689 to 1.03	MPa
Screw Speed	100 to 200	rpm
Screw L/D Ratio	20.0:1.0	

Extrusion	Nominal Value	Unit
Drying Temperature	82	°C
Drying Time	3.0	hr
Cylinder Zone 1 Temp.	182 to 204	°C
Cylinder Zone 2 Temp.	182 to 204	°C
Cylinder Zone 3 Temp.	188 to 210	°C
Cylinder Zone 4 Temp.	188 to 210	°C
Melt Temperature	193 to 216	°C
Die Temperature	193 to 216	°C
Take-Off Roll	21 to 49	°C

Extrusion Notes

Screen Pack: 20 to 60 mesh
Screw: 3:1 Compression Ratio

Notes

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

[2] Method Ba, Angle (Unnicked)

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