TEKNOR APEX

Sarlink® TPV 4145

Teknor Apex Company - Thermoplastic Vulcanizate

Thursday, June 29, 2017

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, 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 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
Specific Gravity	0.960		ASTM D792
Density	0.960	g/cm³	ISO 1183
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress			ASTM D412
Across Flow : 100% Strain	189	psi	
Flow : 100% Strain	377	psi	
Tensile Stress			ISO 37
Across Flow : 100% Strain	189	psi	
Flow : 100% Strain	377	psi	
Tensile Strength			ASTM D412
Across Flow : Break	624	psi	
Flow : Break	450	psi	
Tensile Stress			ISO 37
Across Flow : Break	624	psi	
Flow : Break	450	psi	
Tensile Elongation			ASTM D412
Across Flow : Break	550	%	
Flow : Break	180	%	

Revision Date: 6/9/2017

Sarlink® TPV 4145

Teknor Apex Company - Thermoplastic Vulcanizate

Elastomers	Nominal Value	Unit	Test Method
Tensile Elongation			ISO 37
Across Flow : Break	550	%	
Flow : Break	180	%	
Tear Strength - Across Flow	110	lbf/in	ASTM D624
Tear Strength - Across Flow [2]	110	lbf/in	ISO 34-1
Compression Set			ASTM D395
73°F, 22 hr	11	%	
158°F, 22 hr	26	%	
257°F, 70 hr	35	%	
Compression Set			ISO 815
73°F, 22 hr	11	%	
158°F, 22 hr	26	%	
257°F, 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	122	°F	UL 746
RTI Imp	122	°F	UL 746
RTI Str	122	°F	UL 746

Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air - Across Flow			ASTM D573
275°F, 1000 hr	-2.0	%	
100% Strain, 275°F, 1000 hr	0.0	%	
302°F, 168 hr	-5.0	%	
100% Strain, 302°F, 168 hr	-3.0	%	
Change in Tensile Strength in Air - Across Flow			ISO 188
275°F, 1000 hr	-2.0	%	
100% Strain 275°F, 1000 hr	0.0	%	
302°F, 168 hr	-5.0	%	
100% Strain 302°F, 168 hr	-3.0	%	
Change in Ultimate Elongation in Air - Across Flow			ASTM D573
275°F, 1000 hr	13	%	
302°F, 168 hr	6.0	%	
Change in Tensile Strain at Break in Air - Across Flow			ISO 188
275°F, 1000 hr	13	%	
302°F, 168 hr	6.0	%	
Change in Durometer Hardness in Air			ASTM D573
Shore A, 275°F, 1000 hr	2.0		
Shore A, 302°F, 168 hr	0.0		
Change in Shore Hardness in Air			ISO 188
Shore A, 275°F, 1000 hr	2.0		
Shore A, 302°F, 168 hr	0.0		
Change in Volume (257°F, 70 hr, in IRM 903 Oil)	110	%	ASTM D471
Change in Volume (257°F, 70 hr, in IRM 903 Oil)	110	%	ISO 1817

Revision Date: 6/9/2017

Sarlink® TPV 4145

Teknor Apex Company - Thermoplastic Vulcanizate

Additional Information	Nominal Value	Unit	Test Method
Apparent Shear Viscosity - Capillary, @ 206/s			
392°F	320	Pa·s	ISO 11443
392°F	320	Pa·s	ASTM D3835

Legal Statement

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	180	°F
Drying Time	3.0	hr
Rear Temperature	350 to 420	°F
Middle Temperature	350 to 420	°F
Front Temperature	350 to 420	°F
Nozzle Temperature	370 to 430	°F
Processing (Melt) Temp	360 to 430	°F
Mold Temperature	50 to 150	°F
Back Pressure	10.0 to 150	psi
Screw Speed	100 to 200	rpm
Screw L/D Ratio	20.0:1.0	

Extrusion	Nominal Value	Unit
Drying Temperature	180	°F
Drying Time	3.0	hr
Cylinder Zone 1 Temp.	360 to 400	°F
Cylinder Zone 2 Temp.	360 to 400	°F
Cylinder Zone 3 Temp.	370 to 410	°F
Cylinder Zone 4 Temp.	370 to 410	°F
Melt Temperature	380 to 420	°F
Die Temperature	380 to 420	°F
Take-Off Roll	70 to 120	°F

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)

Revision Date: 6/9/2017

Sarlink® TPV 4145

Teknor Apex Company - Thermoplastic Vulcanizate

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

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

etpsales@teknorapex.co.uk

Revision Date: 6/9/2017