

Santoprene™ 103-40

Thermoplastic Vulcanizate

ExxonMobil Chemical

Message:

It is a hard, black, universal thermoplastic vulcanized elastomer (T PV) in the thermoplastic elastomer (TPE) series. This material has good physical properties and chemical resistance at the same time, and is suitable for a wide range of fields. This brand of Shanduping TPV is a shear rate dependent product that can be processed on conventional thermoplastic injection molding, extrusion molding, blow molding, thermoforming or vacuum forming equipment. This is a polyolefin-based material that can be recycled in the production process.

General Information	
UL YellowCard	E80017-250499
Features	Good dimensional stability
	Insulation
	Recyclable materials
	Good electrical performance
	Good tear strength
	Ozone resistance
	Good chemical resistance
	Fatigue resistance
Uses	Electrical components
	Diaphragm
	Pipe fittings
	Active hinge
	Home appliance components
	Parts under the hood of a car
	Application in Automobile Field
	Consumer goods application field
Agency Ratings	UL QMFZ2
	UL QMFZ8
RoHS Compliance	RoHS compliance
UL File Number	E80017
Appearance	Black
Forms	Particle
Processing Method	Blow molding
	Multiple injection molding
	Co-extrusion molding
	Extrusion
	Extrusion blow molding

Sheet extrusion molding

Thermoforming

Profile extrusion molding

Vacuum forming

Injection blowing molding

Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	0.948	g/cm ³	ASTM D792
--	0.950	g/cm ³	ISO 1183
Detergent Resistance	f4		UL 2157
Detergent Resistance	f3		UL 749
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shaw D, 15 seconds, 23°C, 2.00mm)	41		ISO 868
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress - Across Flow (100% Strain, 23°C)	9.00	MPa	ASTM D412, ISO 37
Tensile Strength - Across Flow (Break, 23°C)	20.7	MPa	ASTM D412, ISO 37
Tensile Elongation - Across Flow (Break, 23°C)	610	%	ASTM D412, ISO 37
Tear Strength - Across Flow			
23°C ¹	67.0	kN/m	ASTM D624
23°C ²	67	kN/m	ISO 34-1
Compression Set			
70°C, 22 hr ³	54	%	ASTM D395B
125°C, 70 hr ⁴	61	%	ASTM D395B
70°C, 22 hr ⁵	54	%	ISO 815
125°C, 70 hr ⁶	61	%	ISO 815
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air (150°C, 168 hr)	-11	%	ASTM D573, ISO 188
Change in Ultimate Elongation in Air (150°C, 168 hr)	-15	%	ASTM D573, ISO 188
Change in Durometer Hardness in Air (support d, 150°C, 168 hr)	4.0		ASTM D573, ISO 188
Change in Tensile Strength			ASTM D471, ISO 1817
23°C, 168 hr, in 10% hydrochloric acid	6.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 15% sodium chloride	4.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 2.5% detergent (Tide)	0.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 50% sodium hydroxide	4.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 95% ethanol	-3.0	%	ASTM D471, ISO 1817

23°C, 168 hr, in 98% sulfuric acid	-22	%	ASTM D471, ISO 1817
23°C, 168 hr, in acetic acid	0.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in cyclohexane	-2.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in methyl ethyl ketone	3.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in isopropanol	5.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in trichloroethylene	8.0	%	ASTM D471, ISO 1817
100°C, 168 hr, in IRM 903 oil	-26	%	ASTM D471, ISO 1817
100°C, 168 hr, in deionized water	3.0	%	ASTM D471, ISO 1817
125°C, 70 hr, in IRM 903 oil	-27	%	ASTM D471, ISO 1817
125°C, 168 hr, in IRM 903 oil	-30	%	ASTM D471, ISO 1817
Change in Ultimate Elongation			ASTM D471, ISO 1817
23°C, 168 hr, in 10% hydrochloric acid	5.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 15% sodium chloride	2.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 2.5% detergent (Tide)	0.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 50% sodium hydroxide	3.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 95% ethanol	-2.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 98% sulfuric acid	-23	%	ASTM D471, ISO 1817
23°C, 168 hr, in acetic acid	3.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in cyclohexane	2.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in methyl ethyl ketone	2.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in isopropanol	5.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in trichloroethylene	2.0	%	ASTM D471, ISO 1817
100°C, 168 hr, in IRM 903 oil	-28	%	ASTM D471, ISO 1817
100°C, 168 hr, in deionized water	0.0	%	ASTM D471, ISO 1817
125°C, 70 hr, in IRM 903 oil	-33	%	ASTM D471, ISO 1817
125°C, 168 hr, in IRM 903 oil	-39	%	ASTM D471, ISO 1817
Change in Durometer Hardness			
Support A, 23°C, 168 hr, in 10% hydrochloric acid	-1.0		ASTM D471
Support A, 23°C, 168 hr, in 15% sodium chloride	2.0		ASTM D471
Support A, 23°C, 168 hr, in 2.5% detergent (Tide)	0.0		ASTM D471
Support A, 23°C, 168 hr, in 50% sodium hydroxide	1.0		ASTM D471
Support A, 23°C, 168 hr, in 95% ethanol	0.0		ASTM D471
Support A, 23°C, 168 hr, in 98% sulfuric acid	2.0		ASTM D471
Support A, 23°C, 168 hr, in acetic acid	-1.0		ASTM D471, ISO 1817
Support A, 23°C, 168 hr, in cyclohexane	-13		ASTM D471, ISO 1817
Support A, 23°C, 168 hr, in methyl ethyl ketone	0.0		ASTM D471, ISO 1817
Support A, 23°C, 168 hr, in isopropyl alcohol	2.0		ASTM D471, ISO 1817

Support A, 23°C, 168 hr, in trichloroethylene	1.0		ASTM D471, ISO 1817
Support A, 100°C, 168 hr, in IRM 903 oil	-13		ASTM D471
Support A, 100°C, 168 hr, in deionized water	0.0		ASTM D471, ISO 1817
Support A, 125°C, 168 hr, in IRM 903 oil	-15		ASTM D471
Support A, 23°C, 168 hr, in 10% hydrochloric acid	-1.0		ISO 1817
Support A, 23°C, 168 hr, in 15% sodium chloride	2.0		ISO 1817
Support A, 23°C, 168 hr, in 2.5% detergent (Tide)	0.0		ISO 1817
Support A, 23°C, 168 hr, in 50% sodium hydroxide	1.0		ISO 1817
Support A, 23°C, 168 hr, in 95% ethanol	0.0		ISO 1817
Support A, 23°C, 168 hr, in 98% sulfuric acid	2.0		ISO 1817
Support A, 100°C, 168 hr, in IRM 903 oil	-13		ISO 1817
Support A, 125°C, 168 hr, in IRM 903 oil	-15		ISO 1817
Change in Mass			ASTM D471
23°C, 168 hr, in 10% hydrochloric acid	0.10	%	ASTM D471
23°C, 168 hr, in 15% sodium chloride	0.10	%	ASTM D471
23°C, 168 hr, in 2.5% detergent (Tide)	0.40	%	ASTM D471
23°C, 168 hr, in 50% sodium hydroxide	0.0	%	ASTM D471
23°C, 168 hr, in 95% ethanol	-0.60	%	ASTM D471
23°C, 168 hr, in 98% sulfuric acid	1.1	%	ASTM D471
23°C, 168 hr, in acetic acid	1.2	%	ASTM D471
23°C, 168 hr, in cyclohexane	-3.4	%	ASTM D471
23°C, 168 hr, in methyl ethyl ketone	-12	%	ASTM D471
23°C, 168 hr, in isopropanol	-5.0	%	ASTM D471
23°C, 168 hr, in trichloroethylene	-1.0	%	ASTM D471
100°C, 168 hr, in IRM 903 oil	35	%	ASTM D471
100°C, 168 hr, in deionized water	1.4	%	ASTM D471
125°C, 168 hr, in IRM 903 oil	44	%	ASTM D471
Change in Mass			ISO 1817
23.0°C, 168 hr, in methyl ethyl ketone	-12	%	ISO 1817
23.0°C, 168 hr, in isopropanol	-5.0	%	ISO 1817
23.0°C, 168 hr, in cyclohexane	-3.4	%	ISO 1817
23.0°C, 168 hr, in trichloroethylene	-1.0	%	ISO 1817
23.0°C, 168 hr, in 95% ethanol	-0.60	%	ISO 1817
23.0°C, 168 hr, in 50% sodium hydroxide	0.0	%	ISO 1817
23.0°C, 168 hr, in 10% hydrochloric acid	0.10	%	ISO 1817
23.0°C, 168 hr, in 15% sodium chloride	0.10	%	ISO 1817
23.0°C, 168 hr, in 2.5% detergent (Tide)	0.40	%	ISO 1817

23.0°C, 168 hr, in 98% sulfuric acid	1.1	%	ISO 1817
23.0°C, 168 hr, in acetic acid	1.2	%	ISO 1817
100°C, 168 hr, in deionized water	1.4	%	ISO 1817
100°C, 168 hr, in IRM 903 oil	35	%	ISO 1817
125°C, 168 hr, in IRM 903 oil	44	%	ISO 1817
Change in Volume			
125°C, 70 hr, in IRM 903 oil	40	%	ASTM D471
125°C, 70 hr, in IRM 903 oil	40	%	ISO 1817
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-52.0	°C	ASTM D746, ISO 812
RTI Elec	85.0	°C	UL 746
RTI	85.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength (23°C, 2.00 mm)	32	kV/mm	ASTM D149
Dielectric Constant (23°C, 1.98 mm)	2.60		ASTM D150, IEC 60250
Comparative Tracking Index (CTI)	PLC 0		UL 746
High Amp Arc Ignition (HAI)	PLC 0		UL 746
High Voltage Arc Resistance to Ignition (HVAR)	PLC 5		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 1		UL 746
Hot-wire Ignition (HWI)			UL 746
1.00 mm	PLC 4		UL 746
1.50 mm	PLC 3		UL 746
3.00 mm	PLC 2		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.00 mm	HB		UL 94
1.50 mm	HB		UL 94
3.00 mm	HB		UL 94
Additional Information			
如果适用,这是基于扇形浇口注塑成型的平板测试结果.拉伸强度,伸长率和拉伸应力沿垂直流动方向测定 - ISO 1 型,ASTM die C.25% 形变时的永久压缩变形.从埃克森美孚欧洲分支机构直接购买的所有产品都符合 REACH 法规. 对于埃克森美孚未进口至欧洲的产品,用户应自行评估其是否满足 REACH 法规.			
Legal statement			
有关详细的产品监管信息,请联系客户服务.未经埃克森美孚化工书面允许,这种产品包括其产品名称,不得在任何医疗应用领域予以使用或			
Injection	Nominal Value	Unit	
Drying Temperature	82.2	°C	
Drying Time	3.0	hr	
Suggested Max Moisture	0.080	%	
Suggested Max Regrind	20	%	
Rear Temperature	193	°C	
Middle Temperature	199	°C	
Front Temperature	204	°C	

Nozzle Temperature	210 - 238	°C
Processing (Melt) Temp	216 - 232	°C
Mold Temperature	10.0 - 51.7	°C
Injection Rate	Fast	
Back Pressure	0.345 - 0.689	MPa
Screw Speed	100 - 200	rpm
Clamp Tonnage	4.1 - 6.9	kN/cm ²
Cushion	3.18 - 6.35	mm
Screw L/D Ratio	16.0:1.0 to 20.0:1.0	
Screw Compression Ratio	2.0:1.0 to 2.5:1.0	
Vent Depth	0.025	mm

Injection instructions

Santoprene TPV与乙缩醛和PVC不相容.更多关于加工和模具设计的信息,请查阅我们的《注射成型指南》.

Extrusion	Nominal Value	Unit
Drying Temperature	82.2	°C
Drying Time	3.0	hr
Melt Temperature	210	°C
Die Temperature	216	°C
Back Pressure	5.00 - 20.0	MPa

Extrusion instructions

Santoprene TPV与乙缩醛和PVC不相容.更多关于加工和模具设计的信息,请查阅我们的《挤出成型指南》.

NOTE

1.	C mould
2.	Method B, right-angle specimen (cut)
3.	Type 1
4.	Type 1
5.	Type a
6.	Type a

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