

Santoprene™ 111-35

Thermoplastic Vulcanizate

ExxonMobil Chemical

Message:

It is a soft, 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 widely used in the field of injection molding. This brand of Shanduping TPV is a shear rate dependent product that can be processed on conventional thermoplastic injection molding equipment. This is a polyolefin-based material that can be recycled in the production process.

General Information			
UL YellowCard	E80017-250501		
Features	Good dimensional stability		
	Low compressive deformability		
	Recyclable materials		
	Good formability		
	Good liquidity		
	Ozone resistance		
	Good chemical resistance		
	Fatigue resistance		
Uses	Soft		
	Washer		
	Architectural application field		
	Seals		
	Application in Automobile Field		
	Mobile phone		
	Sporting goods		
	Printing machine parts		
Agency Ratings	UL QMFZ2		
	UL QMFZ8		
RoHS Compliance	RoHS compliance		
UL File Number	E80017		
Appearance	Black		
Forms	Particle		
Processing Method	Multiple injection molding		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			

--	0.928	g/cm ³	ASTM D792
--	0.930	g/cm ³	ISO 1183
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shaw A, 15 seconds, 23°C, 2.00mm)	38		ISO 868
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress - Across Flow (100% Strain, 23°C)	1.00	MPa	ASTM D412, ISO 37
Tensile Strength - Across Flow (Break, 23°C)	2.90	MPa	ASTM D412, ISO 37
Tensile Elongation - Across Flow (Break, 23°C)	330	%	ASTM D412, ISO 37
Tear Strength - Across Flow			
23°C ¹	10.0	kN/m	ASTM D624
23°C ²	10	kN/m	ISO 34-1
Compression Set			
23°C, 22 hr ³	10	%	ASTM D395B
125°C, 70 hr ⁴	31	%	ASTM D395B
23°C, 22 hr ⁵	10	%	ISO 815
125°C, 70 hr ⁶	31	%	ISO 815
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air (150°C, 168 hr)	-29	%	ASTM D573, ISO 188
Change in Ultimate Elongation in Air (150°C, 168 hr)	-1.0	%	ASTM D573, ISO 188
Change in Durometer Hardness in Air (Shore A, 150°C, 168 hr)	-1.0		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	-14	%	ASTM D471, ISO 1817
23°C, 168 hr, in 2.5% detergent (Tide)	-6.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 50% sodium hydroxide	-5.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 95% ethanol	-8.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 98% sulfuric acid	-47	%	ASTM D471, ISO 1817
23°C, 168 hr, in acetic acid	-6.0	%	ASTM D471, ISO 1817
	40		
23°C, 168 hr, in cyclohexane	40	%	ASTM D471, ISO 1817
23°C, 168 hr, in methyl ethyl ketone	43	%	ASTM D471, ISO 1817
23°C, 168 hr, in isopropanol	27	%	ASTM D471, ISO 1817
23°C, 168 hr, in trichloroethylene	56	%	ASTM D471, ISO 1817
100°C, 168 hr, in IRM 903 oil	-57	%	ASTM D471, ISO 1817
100°C, 168 hr, in deionized water	-18	%	ASTM D471, ISO 1817

125°C, 70 hr, in IRM 903 oil	-61	%	ASTM D471, ISO 1817
125°C, 168 hr, in IRM 903 oil	-67	%	ASTM D471, ISO 1817
Change in Ultimate Elongation			ASTM D471, ISO 1817
23°C, 168 hr, in 10% hydrochloric acid	0.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 15% sodium chloride	-7.0	%	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	3.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in 98% sulfuric acid	-10	%	ASTM D471, ISO 1817
23°C, 168 hr, in acetic acid	-3.0	%	ASTM D471, ISO 1817
23°C, 168 hr, in cyclohexane	63	%	ASTM D471, ISO 1817
23°C, 168 hr, in methyl ethyl ketone	80	%	ASTM D471, ISO 1817
23°C, 168 hr, in isopropanol	53	%	ASTM D471, ISO 1817
23°C, 168 hr, in trichloroethylene	77	%	ASTM D471, ISO 1817
100°C, 168 hr, in IRM 903 oil	-63	%	ASTM D471, ISO 1817
100°C, 168 hr, in deionized water	-17	%	ASTM D471, ISO 1817
125°C, 70 hr, in IRM 903 oil	-65	%	ASTM D471, ISO 1817
125°C, 168 hr, in IRM 903 oil	-70	%	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)	2.0		ASTM D471
Support A, 23°C, 168 hr, in 50% sodium hydroxide	4.0		ASTM D471
Support A, 23°C, 168 hr, in 95% ethanol	1.0		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	-11		ASTM D471, ISO 1817
Support A, 23°C, 168 hr, in methyl ethyl ketone	15		ASTM D471, ISO 1817
Support A, 23°C, 168 hr, in isopropyl alcohol	5.0		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	-26		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	-30		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)	2.0		ISO 1817
Support A, 23°C, 168 hr, in 50% sodium hydroxide	4.0		ISO 1817
Support A, 23°C, 168 hr, in 95% ethanol	1.0		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	-26		ISO 1817
Support A, 125°C, 168 hr, in IRM 903 oil	-30		ISO 1817
Change in Mass			ASTM D471
23°C, 168 hr, in 10% hydrochloric acid	0.20	%	ASTM D471
23°C, 168 hr, in 15% sodium chloride	0.10	%	ASTM D471
23°C, 168 hr, in 2.5% detergent (Tide)	0.90	%	ASTM D471
23°C, 168 hr, in 50% sodium hydroxide	-0.30	%	ASTM D471
23°C, 168 hr, in 95% ethanol	0.20	%	ASTM D471
23°C, 168 hr, in 98% sulfuric acid	7.2	%	ASTM D471
23°C, 168 hr, in acetic acid	6.9	%	ASTM D471
23°C, 168 hr, in cyclohexane	-11	%	ASTM D471
23°C, 168 hr, in methyl ethyl ketone	-41	%	ASTM D471
23°C, 168 hr, in isopropanol	-25	%	ASTM D471
23°C, 168 hr, in trichloroethylene	-20	%	ASTM D471
100°C, 168 hr, in IRM 903 oil	93	%	ASTM D471
100°C, 168 hr, in deionized water	6.2	%	ASTM D471
125°C, 168 hr, in IRM 903 oil	100	%	ASTM D471
Change in Mass			ISO 1817
23.0°C, 168 hr, in methyl ethyl ketone	-41	%	ISO 1817
23.0°C, 168 hr, in isopropanol	-25	%	ISO 1817
23.0°C, 168 hr, in trichloroethylene	-20	%	ISO 1817
23.0°C, 168 hr, in cyclohexane	-11	%	ISO 1817
23.0°C, 168 hr, in 50% sodium hydroxide	-0.30	%	ISO 1817
23.0°C, 168 hr, in 15% sodium chloride	0.10	%	ISO 1817
23.0°C, 168 hr, in 10% hydrochloric acid	0.20	%	ISO 1817
23.0°C, 168 hr, in 95% ethanol	0.20	%	ISO 1817
23.0°C, 168 hr, in 2.5% detergent (Tide)	0.90	%	ISO 1817
100°C, 168 hr, in deionized water	6.2	%	ISO 1817
23.0°C, 168 hr, in acetic acid	6.9	%	ISO 1817
23.0°C, 168 hr, in 98% sulfuric acid	7.2	%	ISO 1817
100°C, 168 hr, in IRM 903 oil	93	%	ISO 1817
125°C, 168 hr, in IRM 903 oil	100	%	ISO 1817
Change in Volume			
125°C, 70 hr, in IRM 903 oil	110	%	ASTM D471
125°C, 70 hr, in IRM 903 oil	110	%	ISO 1817
Thermal	Nominal Value	Unit	Test Method

Brittleness Temperature	-63.0	°C	ASTM D746, ISO 812
Flammability	Nominal Value		Test Method
Flame Rating (1.50 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.

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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	177 - 193	°C
Middle Temperature	179 - 199	°C
Front Temperature	179 - 204	°C
Nozzle Temperature	191 - 229	°C
Processing (Melt) Temp	193 - 241	°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		
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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》.

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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