

Flexible solution for low voltage cables and connectors

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Santoprene™ thermoplastic vulcanizates (TPVs) have proven performance in molded electrical connectors and low voltage cable (<1kV) insulation and jacketing. Santoprene TPV has high flexibility for ease of installation, exceptional flex fatigue for crack resistance, and weatherability. The excellent electrical properties including dielectric strength and volume resistivity can be noted below with UL compliance.

Properties	Test method based on	Santoprene TPV grades				
		201-64 Colorable	201-73 Colorable	203-40 Colorable	121-73W175 Black	251-80W232 Colorable
Physical and mechanical properties (Typical values)						
Density (g/cc)	ASTM D792	0.970	0.970	0.950	0.970	1.240
Hardness (15 sec) Shore A/D	ISO 868	69A	78A	41D	78A	86A
100% modulus (MPa)	ASTM D412	2.60	3.60	9.00	3.76	3.90
Tensile strength (MPa)	ASTM D412	7.00	8.80	20.70	8.69	9.00
Elongation at break (%)	ASTM D412	450	490	610	460	550
Physical and mechanical properties after aging 150°C for 168 hrs						
Change in hardness	ISO 868	2	7	4	1	-
Change in tensile strength	ASTM D412	-12	-1	-11	-25	-
Change in elongation at break	ASTM D412	-6	-3	-15	-23	-
DSC melting point (°C)	ExxonMobil method	153.4	152.9	-	153.9	156.2
Brittleness temperature	ASTM D746	-60	-60	-52	-60	-
Fire resistance properties						
UL flammability rating	UL 94	HB	HB	HB	HB	V = 0
Oxygen index (%)	ASTM D2863	-	-	-	-	27
Electrical properties						
Volume resistivity (ohm-cm) 500V for 60 seconds	ASTM D257	7.67X10 ¹⁵	6.83X10 ¹⁵	-	8.04X10 ¹⁵	-
Volume resistivity (ohm-cm) after water immersion 80°C/3 days	ASTM D257	3.58X10 ¹⁵	2.39X10 ¹⁵	-	3.05X10 ¹⁵	-
Dielectric strength (kV/mm)	ASTM D149	30	30	28	27	28 kV/mm

Santoprene TPV grades are available in hardness 55 Shore A to 50 Shore D.

These grades also provide excellent environmental stress crack resistance (ESCR), heat resistance and have a high melting point.

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