

# VECTOR 4111A

## Styrene-Isoprene-Styrene (SIS) Block Copolymer

- SIS<sup>(1)</sup> triblock copolymer.
- Contains < 1% diblock copolymer.
- Low styrene, low modulus copolymer.
- Outstanding thermal stability and melt processability.
- Supplied as a dense pellet, dusted with talc.
- VECTOR styrenic block copolymers find use under certain regulations as articles or as ingredients in articles intended for food contact or medical applications. Please contact your Dexco Polymers agent for a detailed letter of certification or further information.

VECTOR 4111A is a linear, pure styrene-isoprene-styrene triblock copolymer produced via proprietary sequential anionic polymerization technology from Dexco Polymers LP, a Dow/ExxonMobil Venture. It is not formulated with the antioxidant TNPP (tris(nonylphenyl) phosphite).

It is the softest pure SIS triblock and is highly elastic. It is well-suited for use in elastomeric film compounds and in formulating adhesives.

<b>Properties</b>			
<b>Polymer Properties</b>	<b>Test Method</b>	<b>Unit</b>	<b>Typical Values <sup>(2)</sup></b>
Styrene	Dexco Method	Wt. %	18
Diblock Content	Dexco Method	Wt. %	<1
Melt Flow Rate <sup>(3)</sup>	ASTM D 1238	dg/min	12
Solution Viscosity <sup>(4)</sup>	ASTM D 2196	Cps	880
Volatiles	Dexco Method	Wt. %	0.2
Ash	ASTM D 1416	Wt. %	0.3
<b>Physical Properties</b>			
Tensile Strength <sup>(5)</sup>	ASTM D 412	PSI (MPa)	4700 (32.4)
300% Modulus <sup>(5)</sup>	ASTM D 412	PSI (MPa)	240 (1.7)
Elongation at Break <sup>(5)</sup>	ASTM D 412	%	1350
Hardness <sup>(6)</sup>	ASTM D 2240	Shore A	39
Specific Gravity	ASTM D 792		0.93
<b>Elastic Properties</b>			
Peak Force @ 500% strain	Stress Relaxation <sup>(7)</sup>	PSI (MPa)	330 (2.3)
Set after 500% strain	Stress Relaxation <sup>(7)</sup>	%	15.7
Peak Force @ 200% strain (A)	Stress Relaxation <sup>(7)</sup>	PSI (MPa)	160 (1.1)
Relaxation @ 200% strain	Stress Relaxation <sup>(7)</sup>	%	6.0
Unload @ 50% strain (B)	Stress Relaxation <sup>(7)</sup>	PSI (MPa)	60 (0.4)
Ratio (A:B)	Stress Relaxation <sup>(7)</sup>		2.6

- (1) "SIS" denotes linear, pure styrene-isoprene-styrene triblock copolymer.
- (2) Typical values, intended only as guides, and should not be construed as specifications.
- (3) Condition 200°C/5 kg.
- (4) 25 Wt. % in toluene at 25°C.
- (5) Tested on roll milled/compression molded plaques (0.035" thick). Tested in the transverse direction.
- (6) 1 sec. dwell.
- (7) Described in US 7,445,831 patent. Tested on roll milled/compression molded plaques (0.035" thick). Tested in the transverse direction at room temperature.

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