

VECTOR 4211A

Styrene-Isoprene-Styrene (SIS) Block Copolymer

- SIS⁽¹⁾ triblock copolymer.
- Contains < 1% diblock copolymer.
- Medium styrene, high 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 4211A is a styrene-isoprene-styrene triblock copolymer and is 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 particularly useful in applications requiring a combination of high modulus and high elasticity in film compounds. It is also suited for formulating adhesives for disposables that require high cohesive strength, low creep compliance, and low viscosity at low application temperatures.

Properties			
Polymer Properties	Test Method	Unit	Typical Values ⁽²⁾
Styrene	Dexco Method	Wt. %	30
Diblock Content	Dexco Method	Wt. %	<1
Melt Flow Rate ⁽³⁾	ASTM D 1238	dg/min	13
Solution Viscosity ⁽⁴⁾	ASTM D 2196	cps	300
Volatiles	Dexco Method	Wt. %	0.2
Ash	ASTM D 1416	Wt. %	0.2
Physical Properties			
Tensile Strength ⁽⁵⁾	ASTM D 412	PSI (MPa)	3800 (26.2)
300% Modulus ⁽⁵⁾	ASTM D 412	PSI (MPa)	610 (4.2)
Elongation at Break ⁽⁵⁾	ASTM D 412	%	900
Hardness ⁽⁶⁾	ASTM D 2240	Shore A	62
Specific Gravity	ASTM D 792		0.94
Elastic Properties			
Peak Force @ 500% strain	Stress Relaxation ⁽⁷⁾	PSI (MPa)	790 (5.5)
Set after 500% strain	Stress Relaxation ⁽⁷⁾	%	13.1
Peak Force @ 200% strain (A)	Stress Relaxation ⁽⁷⁾	PSI (MPa)	220 (1.5)
Relaxation @ 200% strain	Stress Relaxation ⁽⁷⁾	%	7.2
Unload @ 50% strain (B)	Stress Relaxation ⁽⁷⁾	PSI (MPa)	90 (0.6)
Unload @ 30% strain	Stress Relaxation ⁽⁷⁾	PSI (MPa)	70 (0.5)
Ratio (A:B)	Stress Relaxation ⁽⁷⁾		2.5

- (1) "SIS" denotes linear 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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