

SPRINTAN™ 701S

Solution-styrene butadiene rubber (S-SBR)

COMPOSITION

SPRINTAN™ 701S is manufactured by anionic solution polymerization using an organolithium initiator. In relation to solid rubber the grade is extended with 37.5 parts of TDAE oil which complies with the EU Directive 2005/69/EC for use in tire applications. The product has a medium styrene/high-vinyl microstructure and a typical glass transition temperature of -25°C. SPRINTAN™ 701S bears NEXT GENERATION functionalization for improved polymer/filler interaction with carbon black as well as with silica. A non-staining stabilizer is added in the production.

APPLICATION

SPRINTAN™ 701S provides outstanding rolling resistance/abrasion for fuel efficient tire treads based on silica and/or carbon black. The high-vinyl microstructure ensures excellent miscibility in blends with BR and makes SPRINTAN™ 701S applicable in summer, all-season, as well as in HP/UHP tires.

PACKAGING

- SPRINTAN™ 701S is supplied in bales of 30 kg nominal weight.
- Bales are wrapped in 50 micron polyethylene film (Vicat softening temperature: 92°C).
- One box contains thirty-two bales (nominal weight 960 kg).

SPECIFICATION SHEET

Raw material specification sheets are available from Trinseo or your local supplier on request.

HANDLING PRECAUTIONS

- SPRINTAN™ 701S has to be kept away from sources of ignition.
- Reference must be made to the Safety Data Sheet for this product.
- The precautions advised in the Safety Data Sheet should be strictly observed.

STORAGE

SPRINTAN™ 701S should be stored in an adequately ventilated area where it will not be subjected to direct sunlight or temperatures in excess of 30°C. Under these conditions SPRINTAN™ 701S has a shelf life of at least 12 months.

TECHNICAL DATA SHEET

SYNTHETIC RUBBER

CHARACTERISTIC PROPERTIES OF SPRINTAN™ 701S

Chemical and physical data

Property	Test Method	Unit	Value
Mooney viscosity ⁽¹⁾	ASTM D 1646	MU	71
Styrene content	SM ⁽²⁾ , FTIR	%	28
Vinyl content	SM ⁽²⁾ , FTIR	%	60
Glas transition temperature	DSC (HR 10 K/min, half height)	°C	-25.0
Total extractables	ASTM D 5774	%	28.0
Volatile Matter ⁽³⁾	ASTM D 5668	%	< 0.75
Ash	ASTM D 5667	%	< 0.3
Specific gravity	SM ⁽²⁾	g/cm ³	0.94

(1) ML 1+4 (100°C) unmassed sample (2) Supplier Method (3) 1h at 105°C in a hot air oven, 5g sample

Test formulation (based on IRB8 black)

Property	Parts by Mass
Polymer	100.00
Stearic acid	1.00
Zinc oxide	3.00
Carbon black IRB 8	50.00
Sulphur	1.75
Accelerator (TBBS)	1.00

Rheometer

Property	Test Method	Unit	Value
t _{s2}	ASTM D 5289 ⁽⁴⁾	min	8.1
t _c (50)	ASTM D 5289 ⁽⁴⁾	min	10.7
t _c (90)	ASTM D 5289 ⁽⁴⁾	min	18.5
ML	ASTM D 5289 ⁽⁴⁾	dNm	3.0
MH	ASTM D 5289 ⁽⁴⁾	dNm	15.2

(4) Test Temperature 160°C

Vulcanisate data^{a) b)}

Property	Test Method	Unit	Value
Hardness ShA	ASTM D 2240 ⁽⁵⁾		56.7
Rebound resilience	ISO 4662 ⁽⁵⁾	%	18.2
Tensile strength	ASTM D 412 ⁽⁶⁾	MPa	20.4
Elongation at break	ASTM D 412 ⁽⁶⁾	%	475
Modulus 300%	ASTM D 412 ⁽⁶⁾	MPa	12.8

(5) Cure: 35 minutes @ 145°C (a) Material properties are typical parameters and do not constitute a sales specification

(b) All figures are based on the test procedures of the Schkopau test lab

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