

SPRINTAN™ SLR 4502-SCHKOPAU

SOLUTION-STYRENE BUTADIENE RUBBER (S-SBR)

Composition

SPRINTAN™ SLR 4502-Schkopau is manufactured by anionic solution polymerization using an organo-lithium initiator. The product has a medium styrene/medium-high vinyl microstructure and a typical glass transition temperature of -35 °C.

SPRINTAN™ SLR 4502-Schkopau is partially coupled and bears a generation 2 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™ SLR 4502-Schkopau provides outstanding rolling resistance/abrasion for fuel efficient tire treads based on silica and/or carbon black. The medium-high-vinyl micro structure ensures excellent miscibility in blends with BR and makes SPRINTAN™ SLR 4502-Schkopau applicable in summer-, all-season-, as well as in HP/UHP tires.

Packaging

- SPRINTAN™ SLR 4502-Schkopau 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 960 kg)

Specification sheet

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

Handling precautions

- SPRINTAN™ SLR 4502-Schkopau 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™ SLR 4502-Schkopau 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™ SLR 4502-Schkopau has a shelf life of at least 12 months.

CHARACTERISTIC PROPERTIES OF SPRINTAN™ SLR 4502-SCHKOPAU

Chemical and Physical Data

Property	Test Method	Unit	Value
Mooney viscosity⁽¹⁾	ASTM D 1646	MU	57.0
Styrene content	SM ⁽²⁾ , (FTIR)	%	20.0
Vinyl content	SM ⁽²⁾ , (FTIR)	%	54.0
Glas transition temperature	DSC (HR 10 K/min, half height)	°C	-35.0
Volatile matter⁽³⁾	ASTM D 5668	%	0.23
Ash	ASTM D 5667	%	0.08
Specific gravity	SM ⁽²⁾	g/cm ³	0.93

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

Test Formulation (based on IRB8 black)

	Parts by Mass
Polymer	100.0
Stearic acid	1.0
Zinc oxide	3.0
Carbon black IRB8	52.5
Aromatic oil	5.0
Sulphur	1.75
Accelerator (TBBS)	1.05

Rheometer^{a) b)}

Property	Test Method	Unit	Value
t_{s2}	ASTM D 5289 ⁽⁴⁾	min	7.3
t_c(50)	ASTM D 5289	min	11.5
t_c(90)	ASTM D 5289	min	17.2
ML	ASTM D 5289	dNm	2.5
MH	ASTM D 5289	dNm	22.9

Vulcanisate Data^{a) b)}

Property	Test Method	Unit	Value
Hardness ShA	ASTM D 2240	-	64.3
Rebound resilience	ISO 4662	%	43.1
Tensile strength	ASTM D 412 ⁽⁵⁾	MPa	22.2
Elongation at break	ASTM D 412	%	370.0
Modulus 300%	ASTM D 412	MPa	17.3

(4) Test temperature 160 °C (5) Cure: 45 minutes at 145 °C (a) Material properties are typical properties and do not constitute a sales specification. In case of developmental grades (XZ...) properties may be subject to change. (b) All figures are based on the test procedures of the Schkopau test lab.

The principles of Responsible Care® and Sustainable Development influence the production of printed literature for Trinseo S.A. and its affiliated companies. As a contribution towards the protection of our environments, Trinseo's printed literature is produced in small quantities and on paper containing recovered/post-consumer fiber and using 100 percent soy-based ink whenever possible.

Product Stewardship

Trinseo and its affiliated companies have a fundamental concern for all who make, distribute, and use their products and for the environment in which we live. This concern is the basis for our Product Stewardship philosophy by which we assess the safety, health, and environmental information on our products so that appropriate steps may be taken to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Trinseo products – from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Customers are responsible for reviewing their manufacturing processes and their applications of Trinseo products from the standpoint of human health and environmental quality to ensure that Trinseo products are not used in ways for which they are not suitable. Trinseo personnel are available to answer questions and to provide reasonable technical support. Trinseo product literature, including safety data sheets, should be consulted prior to the use of Trinseo products. Current safety data sheets are available from Trinseo.

No freedom from infringement of any patent owned by Trinseo or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, the customer is responsible for determining whether products and the information in this document are appropriate for the customer's use and for ensuring that the customer's workplace and disposal practices are in compliance with applicable legal requirements. Although the information herein is provided in good faith and was believed to be accurate when prepared, Trinseo assumes no obligation or liability for the information in this document.

Notice regarding medical application restrictions

Trinseo requests that customers refer to Trinseo's Medical Application Policy <http://www.trinseo.com/medical.htm> before considering the use of Trinseo products in medical applications. The restrictions and disclaimers set forth in that policy are incorporated by reference.

Disclaimer

Trinseo makes no warranties, either express or implied, in this document; all implied warranties of merchantability or fitness for a particular purpose (including medical applications) are expressly excluded. Trinseo disclaims any and all liability for losses or damages that may result from the use of Trinseo products in unsupported use. Trinseo makes no warranties, express or implied, that the use of any Trinseo product will be free from any infringement claims.

For more information on products, innovations, expertise, and other services available from Trinseo, visit www.trinseo.com, or contact us as indicated below.

North America

U.S.	+1-855-TRINSEO (+1-855-874-6736)
U.S. & Canada	+1-989-633-1718

Latin America

Brazil	+55-11-5184-8722
Argentina, Chile, South Region of LAA	+54-11-4319-0100
Mexico, Colombia, North Region of LAA	+52-55-5201-4700

Europe/Middle East/Africa

+800-444-11-444
+31-11567-2601

Asia Pacific

	+603-7965-53-19
China	+86-21-3851-1017

Email CIG@trinseo.com

Internet trinseo.com

General Notice

Any photographs of end-use applications in this document represent potential end-use applications but do not necessarily represent current commercial applications, nor do they represent an endorsement by Trinseo of the actual products. Further, these photographs are for illustration purposes only and do not reflect either an endorsement or sponsorship of any other manufacturer for a specific potential end-use product or application, or for Trinseo, or for specific products manufactured by Trinseo.

If products are described as "experimental" or "developmental": (1) product specifications may not be fully determined; (2) analysis of hazards and caution in handling and use are required; (3) there is greater potential for Trinseo to change specifications and/or discontinue production, and (4) although Trinseo may from time to time provide samples of such products, Trinseo is not obligated to supply or otherwise commercialize such products for any use or application whatsoever.

For additional information not covered by the content of this document or to ensure you have the latest version of this document available, please refer to the Customer Information Group contact information on our website at www.trinseo.com/contact/.

