

An aerial photograph of a road surface. A large, curved section of the road is covered in a dark, glossy asphalt sealant, contrasting with the lighter, textured asphalt of the rest of the road. The sealant appears to be a thick, dark emulsion.

ADMIXUS[®]

**Improves Performance of
Asphalt Emulsion Sealers**

Asphalt Emulsion Sealers:

- Market Value: USA \$465 mil in 2018, forecast growth to \$716 mil by 2027 with 4.9% CAGR.*
- Applications: Parking lot and driveway sealers, slurry seal.
- Customers: National and regional producers.
- Benefits: Improved film formation, tensile strength, wet track abrasion performance.
- Formulation: Potential to reduce other raw materials when ADMIXUS® is added to the formula.

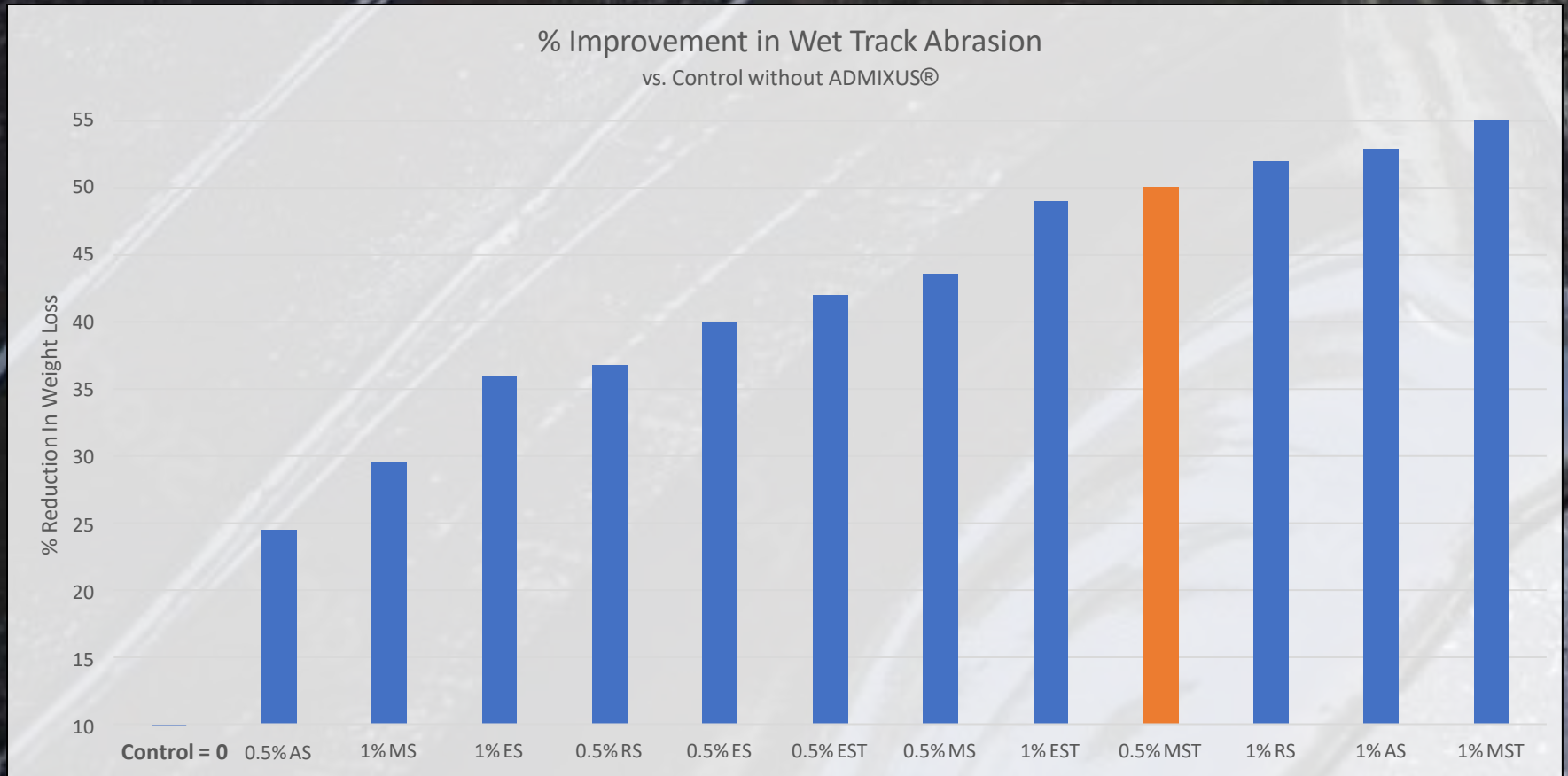
*Transparency Market Research: North American Asphalt Sealer Report 2018-2027

Evaluation Background:

Purchased a typical entry level commercial asphalt emulsion driveway sealer at a local big box store.

- Product cost \$22 per 4.75 gallon bucket.
- A range of ADMIXUS® grades were added at two typical addition rates.
- Tensile stress, strain, modulus, and film formation was observed for each sample.
- Conducted ASTM Wet track abrasion testing on all samples.

Wet Track Abrasion Improvement:



ADMIXUS® MST at 0.5% provides the best value.

Chemical Resistance Results:

Cured films of each sample were tested per ASTM standards for chemical resistance to common automotive related chemicals.

The following substances were included:

- Gasoline
- Diesel fuel
- Brake fluid
- Transmission fluid
- Power steering fluid

All samples containing ADMIXUS® were significantly outperformed the commercial control.

Benefits of ADMIXUS® in Gasoline Testing



Commercial Control Before



Commercial Control After

Note: 6 day soak in gasoline prior to conducting ASTM D3910 Wet Track Abrasion

Benefits of ADMIXUS® in Gasoline Testing



0.5% ADMIXUS® MST Before

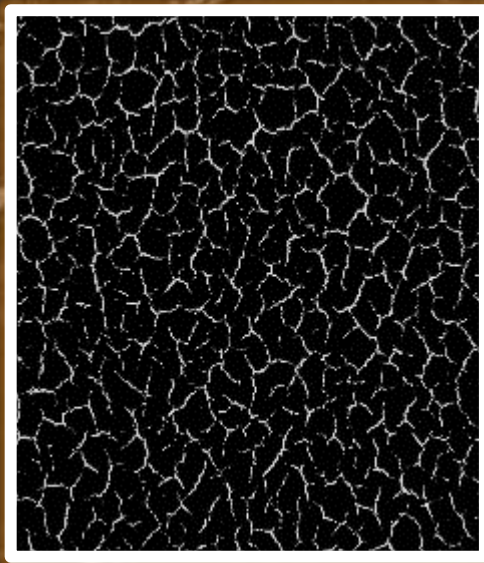


0.5% ADMIXUS® MST After

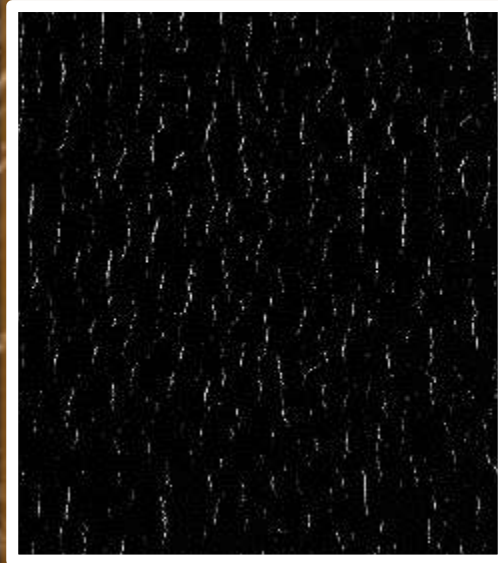
Note: 6 day soak in gasoline prior to conducting ASTM D3910 Wet Track Abrasion

Improved Film Formation with ADMIXUS®

Asphalt film cured at 55°F for five days on glass plate over lightbox



**Control – No
ADMIXUS®**



0.5% ADMIXUS®

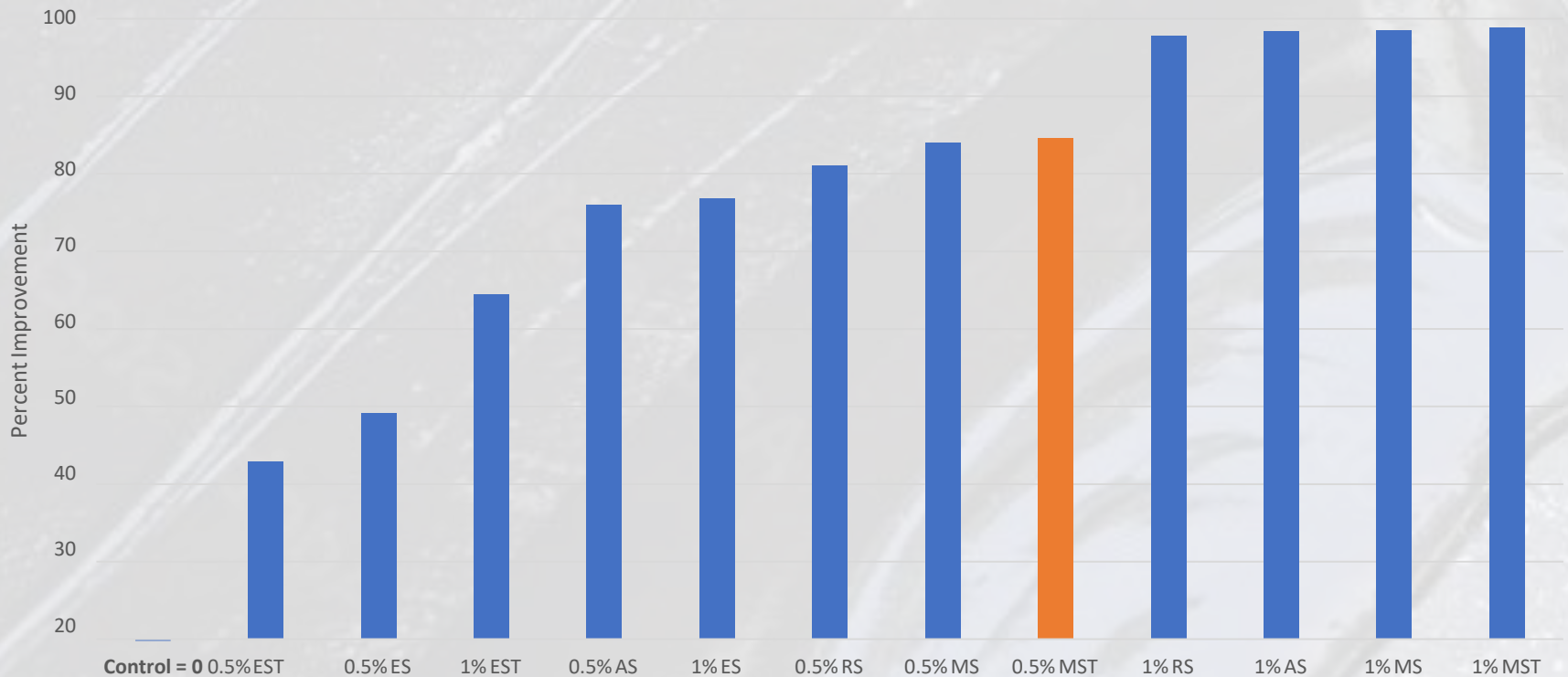


1% ADMIXUS®

NOTE: Films shown above contain MiniFIBERS, Inc. ADMIXUS® MST; other grades provided similar improvement

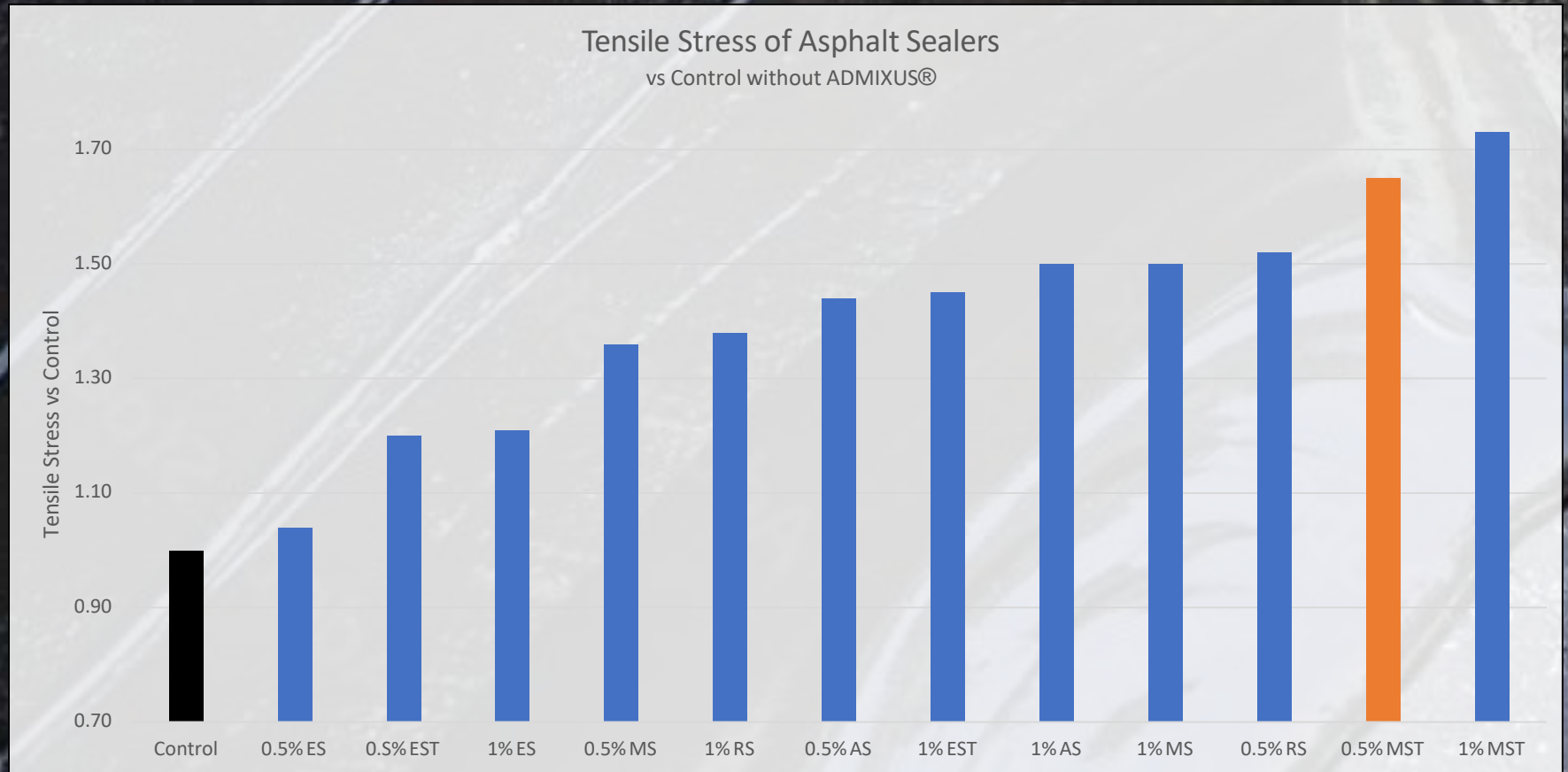
Film Formation Results:

Percent Reduction in Cracked Film
vs. Control without ADMIXUS®



ADMIXUS® MST at 0.5% provides the best value.

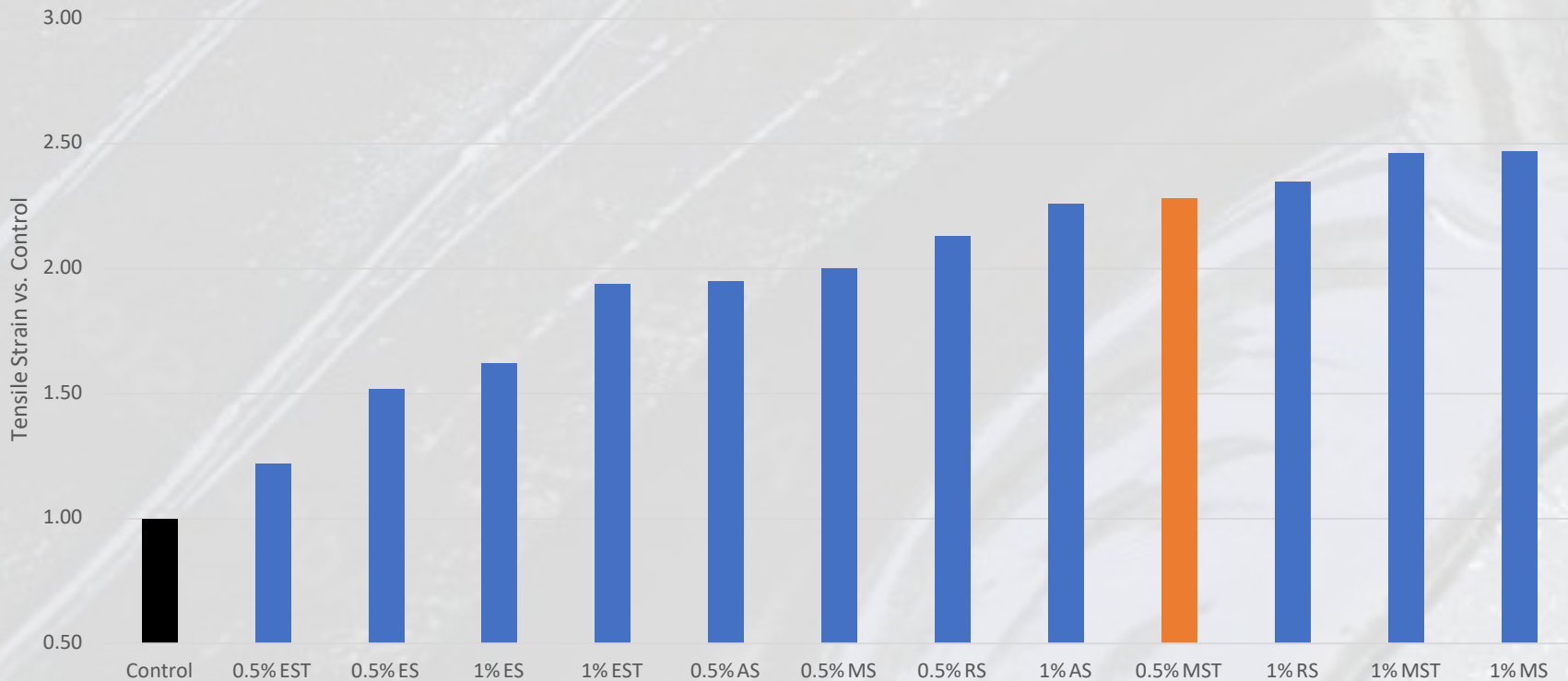
Tensile Stress Results:



ADMIXUS® MST at 0.5% provides the best value.

Tensile Strain Results:

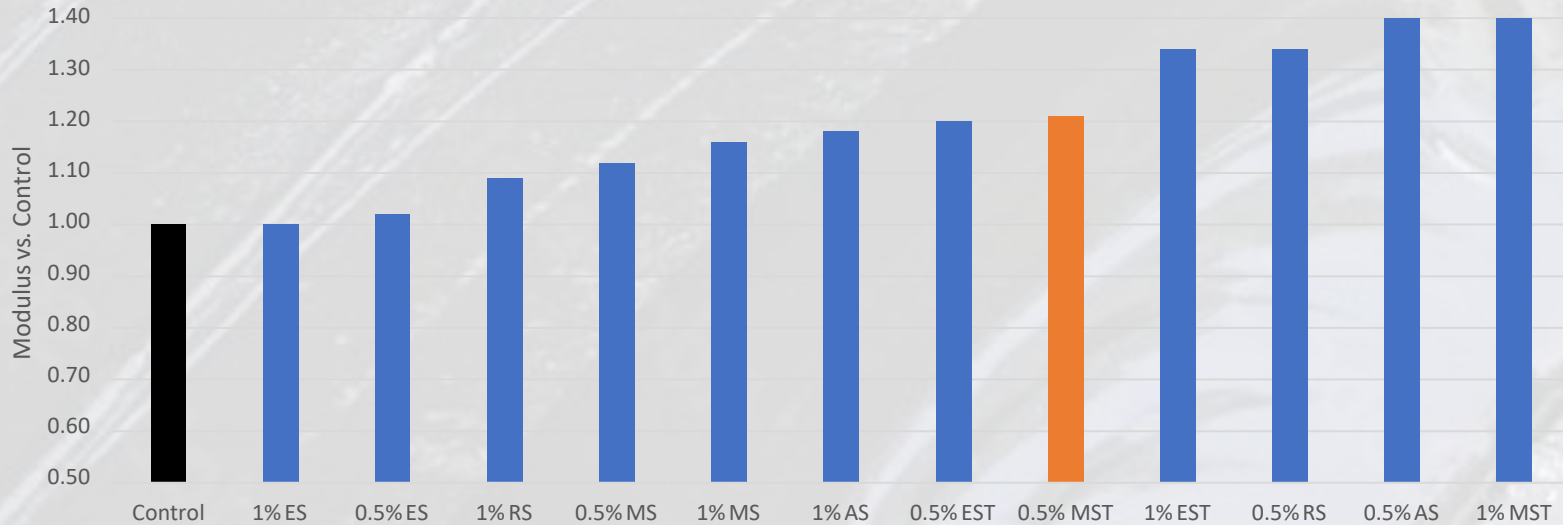
Tensile Strain of Asphalt Sealers
vs Control without ADMIXUS®



ADMIXUS® MST at 0.5% provides the best value.

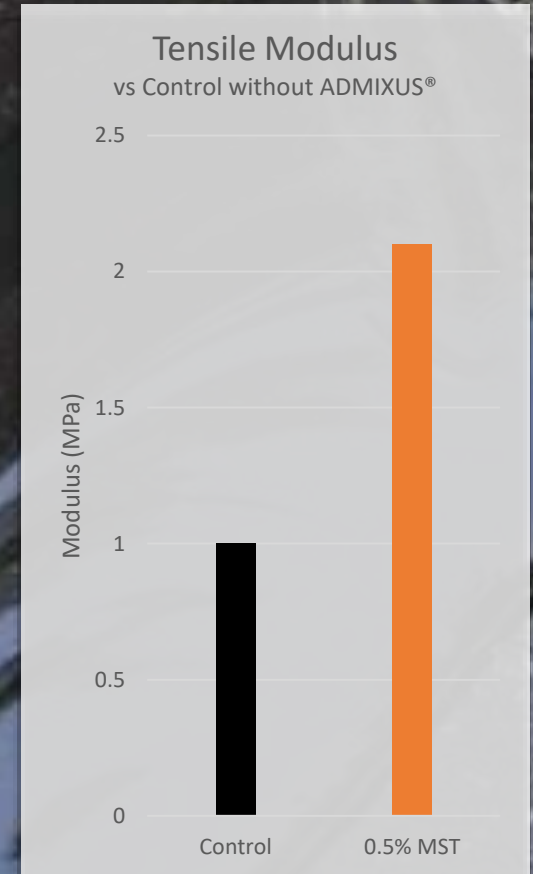
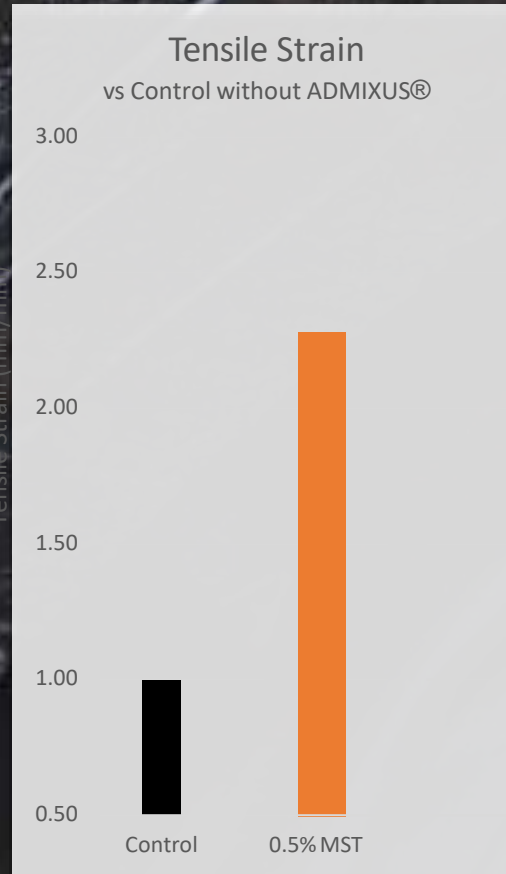
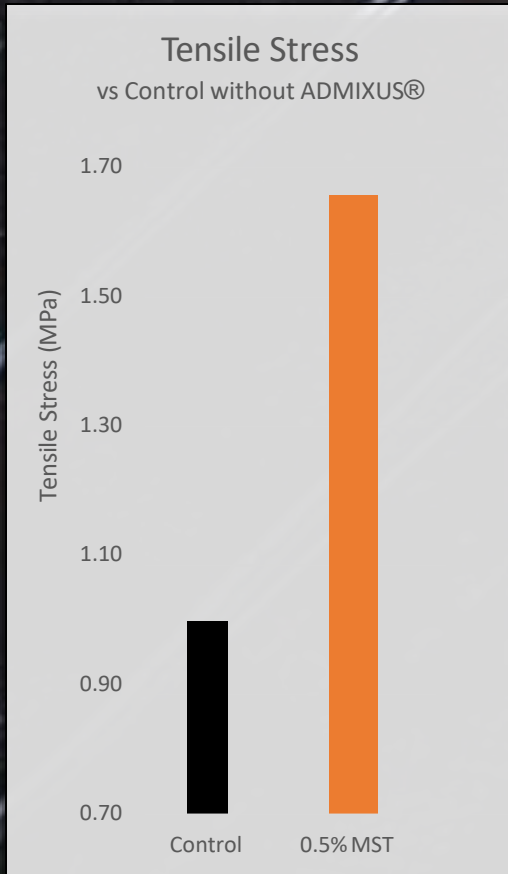
Modulus Results:

Modulus of Asphalt Sealers
vs Control without ADMIXUS®



ADMIXUS® AS at 0.5% provides the best value.

Tensile Results:



ADMIXUS® MST at 0.5% provides the best value.

ADMIXUS[®] Evaluation Summary:

Physical performance properties were improved across all samples.

- ADMIXUS[®] MST @ 0.5% combines the best overall performance and economics.
- ASTM Wet Track Abrasion improved by 50 – 55%.
- Film formation was improved by 86 – 99%.
- Significant improvements were achieved in tensile stress, strain, and modulus.
- The addition of ADMIXUS[®] MST may enable formulators to reduce the concentration of other raw materials.



Please contact us for more information:

MINIFIBERS, INC.

www.minifibers.com

(423)282-4242

info@minifibers.com

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