Moore & Munger, Inc.

Since 1888

SASOLINK

1. What is Sasolink?

SASOLINK is a unique combination of German and USA technologies that meets many of the Customers needs efficiently and economically in achieving target specifications for Polymer Modified Asphalts. Sasolink is used at a concentration of 0.3% by mass on combined mass of asphalt plus polymer.

2. Why Sasolink and how does Sasolink work?

In designing **SASOLINK** the objective was to employ a unique chemical linking mechanism that enables the asphalt formulator to work with ease to modify asphalts in a convenient manner and giving control over the PG range. **SASOLINK** is a chemical linking agent that effectively gets to work in the final modified asphalt blend in forming a unique chemical linkage of Polymer as a continuos phase thereby ensuring good storage/separation stability and reduced overall polymer requirements. The actual mechanism is through a chemical linkage of the polymer to form a stable and continuos network structure. The fluorescent microscope slides provided below demonstrate the power of the **SASOLINK** technology in producing finer chemically linked dispersions of a more consistent and reproducible quality.

3. Stretching the PG Box.

It is the aim of every asphalt formulator to be able to take the most economic source of asphalt and enhance the high temperature properties (DSR value) and comply with low temperature requirements (BBR/Direct Tension/Critical Cracking) in fulfilling PG targets. **SASOLINK** makes the achievement of this objective conveniently and facilitates the accommodation of other additives to target specific properties. The following examples show the effectiveness of **SASOLINK** in combination with SBS of varying quantities:

Base 64-22	**Base 64-22**	**Base 64-22**	**Base 64-22**
	2% SBS	**2% SBS**	**4% SBS**
		0.3% Sasolink	
PG Grading (64-22)	**PG Grading (70-22)**	**PG Grading (76-22)**	**PG Grading (76-22)**

4. The Power of the Sasolink Technology includes:

(a) Convenient to handle free-flowing powder form.
(b) Ease of dispersion

(c) Dispersion time is dramatically reduced from the usual 5 hours dispersion time (for SBS alone) to about 2 hours in total, further no post dispersion stabilization time is necessary.
(d) Since dispersion cycle times are minimized, Plant throughput is increased.
(e) The viscosity of the modified asphalt is substantially reduced such that it may be easily handled and transported with consequent energy savings.
(f) A stable modified asphalt blend is produced such that it is easy to handle, transport and use without the bother of phase separation and associated inconveniences.

5. Roofing Applications

SASOLINK is also recommended for roofing applications and has all of the benefits outlined above. The low viscosity improves workability substantially in both shingle and membrane applications and provides a higher capacity for fillers. Bleeding, deformation and high temperature wear is substantially reduced by the more effectively dispersed and cross-linked modifier system.

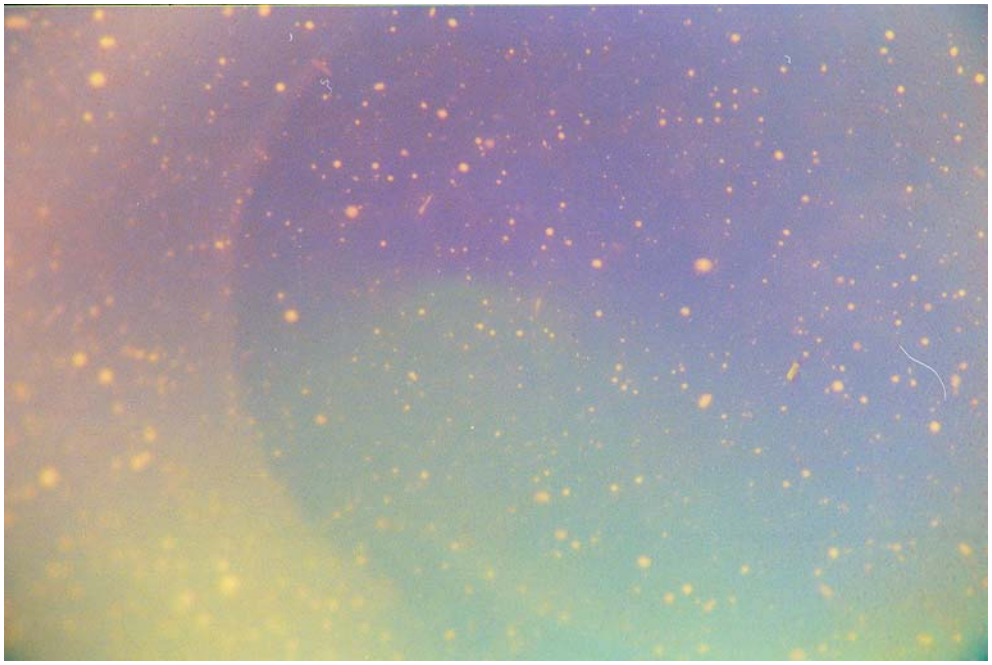
Since substantially higher polymer loading is employed in the Roofing Industry, **SASOLINK** provides significant savings through more effective Polymer cross-linking and reduced overall levels to meet target specifications.

(A). UV MICROGRAPH OF ASPHALT SAMPLE MODIFIED WITHOUT SASOLINK BUT A MIXTURE OF 1% SASOBIT AND 2% SBS

The micrograph below is that of an asphalt sample modified with 1% Sasobit and 2% SBS without the Cross-Linking agent i.e. w**ithout SASOLINK.**

The mixing temperature was 350°F for 90 minutes using a Silverson high shear mixer.

The yellow fluorescent spots clearly highlight the SBS double bonds that are still intact i.e. no mechanism present to break the bonds and promote cross-linking.

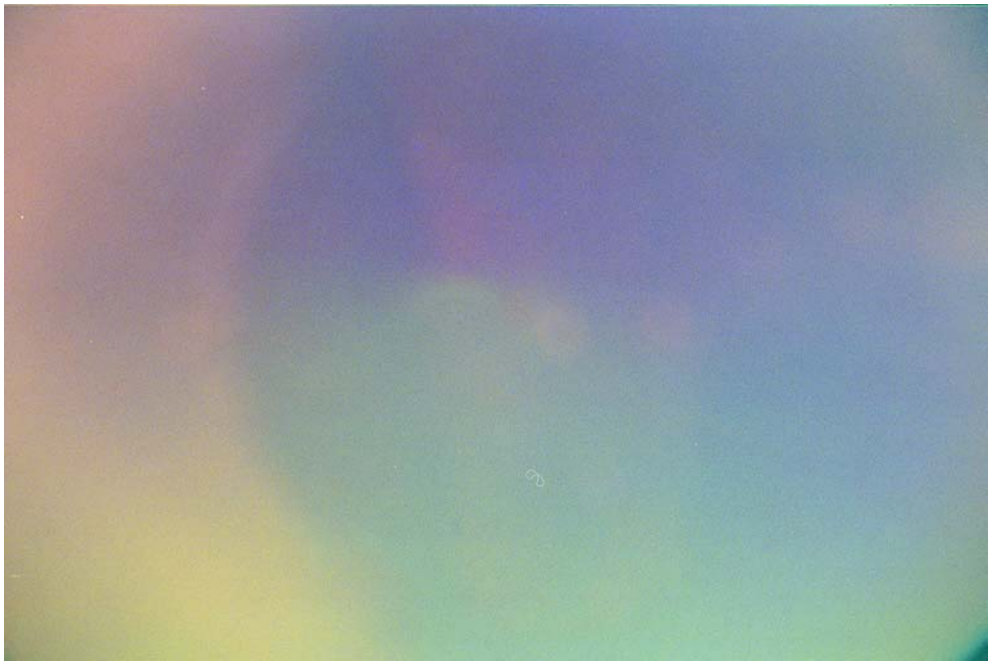


(B). UV MICROGRAPH OF ASPHALT SAMPLE MODIFIED WITH SASOLINK

The micrograph below is that of an asphalt sample modified **with SASOLINK.**

The mixing temperature was 350° F for 90 minutes using a Silverson high shear mixer to be comparative with the experiment without **SASOLINK**.

The yellow fluorescent spots are no longer visible demonstrating that the double bonds on the SBS have been utilized to produce a complete network structure i.e. the SBS has been more effectively dispersed.



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