

Solution Case Study

Formulate Transparent SMP-Based Adhesives and Sealants with Reduced Yellowing over Time and Increased Mechanical Properties

Applications

- Construction
- Transportation
- DIY
- Industrial assembly

Key benefits

- Transparent SMP-based
- Improved mechanical properties compared to market standard
- Reduced yellowing during storage
- Reduced yellowing during service lifetime

The challenge

Many formulators are facing significant challenges when formulating **transparent SMP-based (silane modified polymers) adhesives and sealants**. Next to questions around transparency or rheology (where AEROSIL® fumed silicas play an important role), the **subsequent creeping of yellowing** of such products during storage or even service lifetime are the key for a successful market entry.

The solution

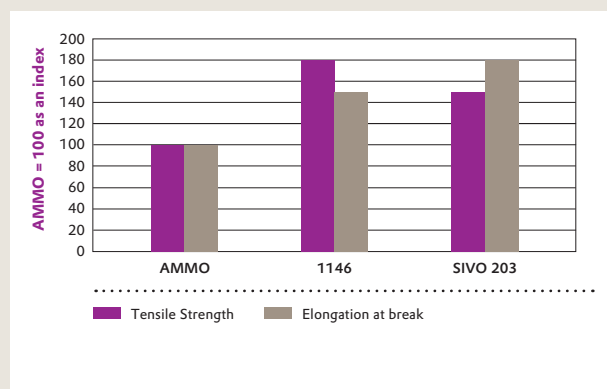
Dynasylan® 1146 and **Dynasylan® SIVO 203** are the most suitable organofunctional silanes that provide desired excellent properties (adhesion, mechanical properties, low yellowing) over a wide range of individual applications (construction, transportation, do-it-yourself, industrial assembly ...).



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Improved mechanical properties: up to 75% tensile strength increase!

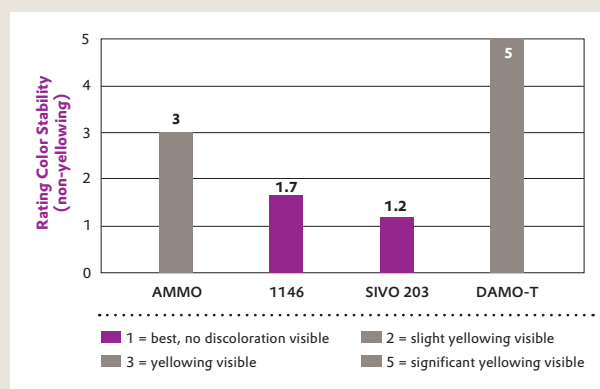
Both tailor-made multifunctional silane systems have been tested in a lab study compared to the market standard Dynasytan® AMMO, and led to strongly improved mechanical properties of the corresponding SMP-based sealants (Figure 1, AMMO = 100 as an index).



Mechanical properties of cured MS Polymer™ sealants

Significant yellowing reduction: no yellowing during storage nor service lifetime

As shown below, the visual evaluation of said sealants indicated Dynasytan® SIVO 203 as best silane solution with a look on color stability while Dynasytan® 1146 was 2nd best (Figure 2). Dynasytan® AMMO gave proper specimen while (the old standard) Dynasytan® DAMO-T failed.



Last but not least, Dynasytan® SIVO 203—and especially Dynasytan® 1146—offer real opportunities to avoid labeling.

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