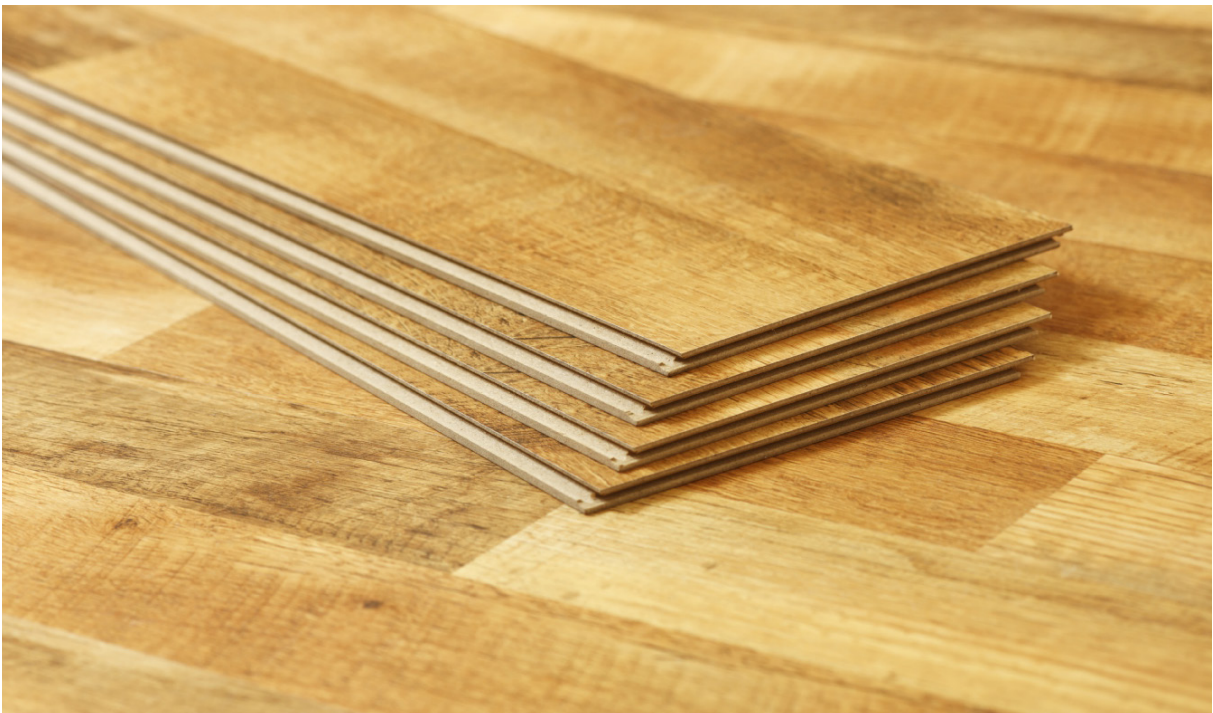


TECHNICAL INFORMATION 1420

SIPERNAT[®] Sodium Aluminosilicate
and **HYDREX**[®] Magnesium
Aluminosilicate for decor paper
applications



SIPERNAT® and HYDREX® Aluminosilicates

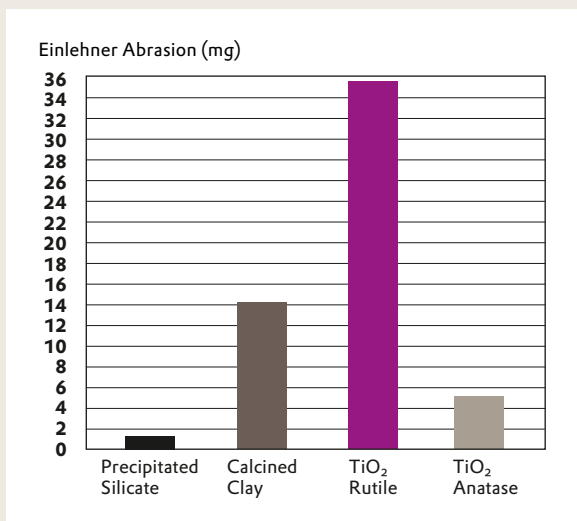
SIPERNAT® and HYDREX® aluminosilicates provide decorative laminates increased wet opacity, UV light resistance and high brightness while reducing abrasivity versus titanium dioxide (TiO₂) and calcined clay. Lower abrasion results in reduced wear and ultimately replacement cost of paper machine parts and printing plates.

SIPERNAT® and HYDREX® aluminosilicates are manufactured by precipitating sodium silicate solution with aluminum/magnesium sulfate creating a unique pore structure which provides decor paper with a significant number of light scattering interfaces between air, pigment and fiber.

As a result, SIPERNAT® and HYDREX® aluminosilicates have excellent light scattering power increasing opacity and brightness. Due to their structure, SIPERNAT® and HYDREX® aluminosilicates also function as a TiO₂ replacement by minimizing overflocculation and optimizing interparticle distance for light scattering. When TiO₂ is properly spaced, opacity increases and the appearance of the paper product is enhanced.

Through advanced product technology and custom application development and support, let us provide the optimal solution for your next decorative laminate project.

Figure 1: Low abrasivity

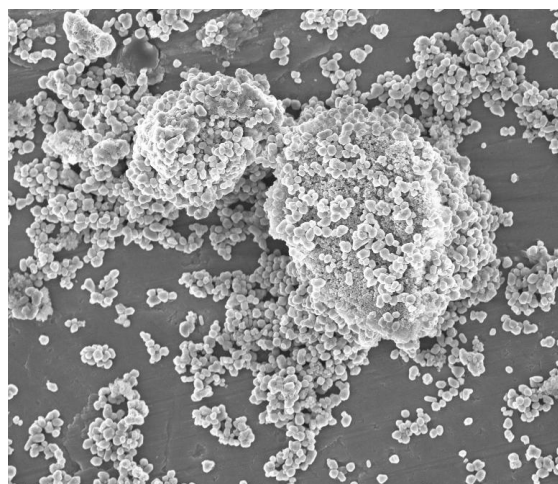
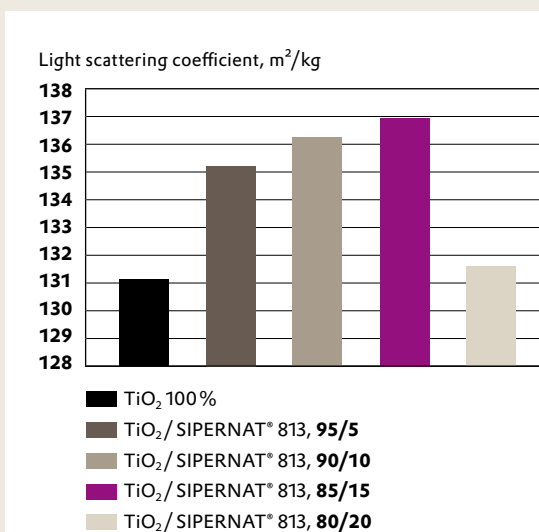


END USE BENEFITS

- Reduced total pigmentation cost
- Improved TiO₂ retention and utilization
- TiO₂ self-agglomeration prevented
- Increased opacity and brightness
- Increased UV-light resistance
- Low abrasivity

Precipitated silicates like SIPERNAT® and HYDREX® aluminosilicates are typically very low abrasives. TiO₂, especially rutile, and calcined clays are known to have high abrasion resulting in excessive wearing of paper machine parts. High abrasion is also a problem in printing, causing damage to printing plates which destroys print quality.

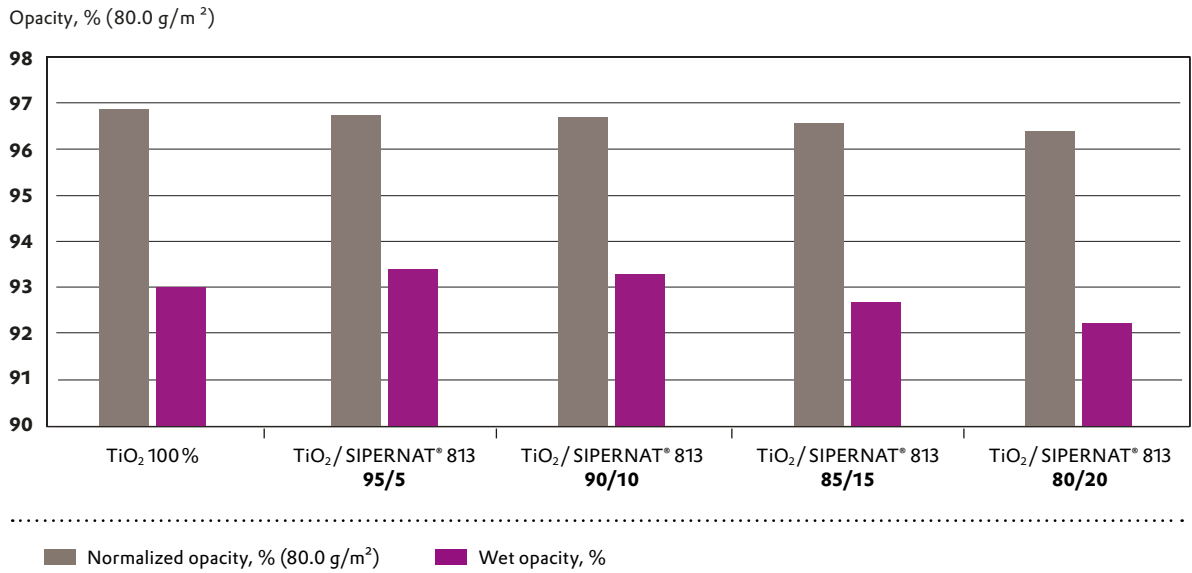
Figure 2: TiO₂ replacement



The structure of SIPERNAT® sodium aluminosilicate provides ideal spacing for TiO₂ resulting in high utilization, good light scattering and easy wetting by impregnation resins.

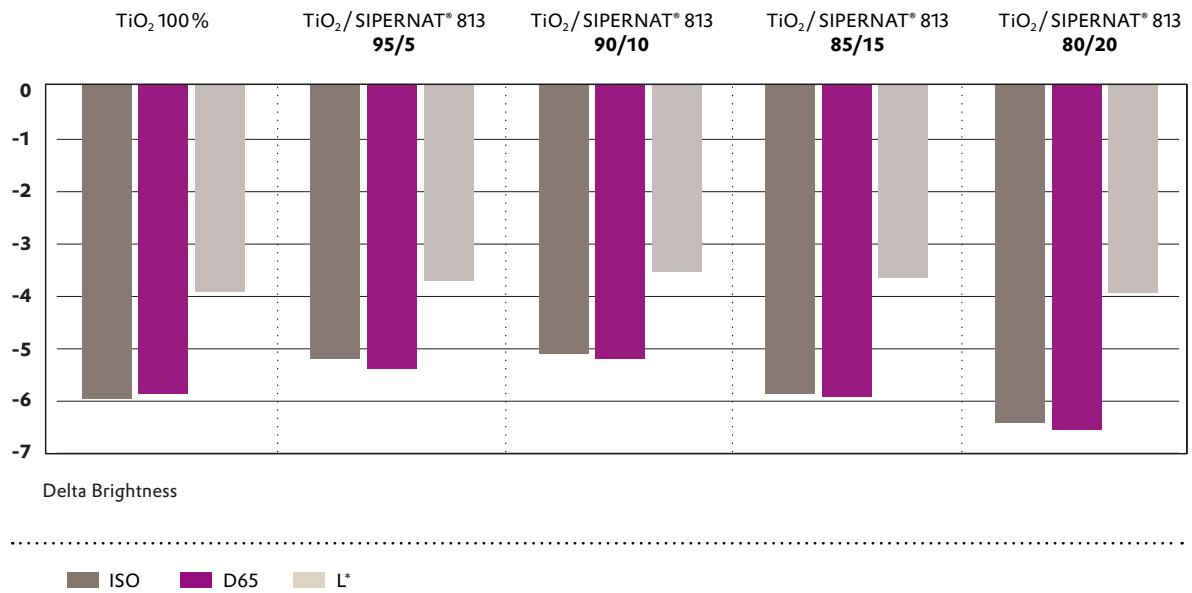
TiO₂ particles attached to porous surface of SIPERNAT® sodium aluminosilicate resulting to improved retention, better TiO₂ dispersion, and maximized opacifying efficiency.

Figure 3: Opacity



Wet opacity develops with 5-10% replacement of TiO₂ with SIPERNAT® sodium aluminosilicate. Typically, the maximum replacement in decorative laminates is approximately 15%.

Figure 4: UV resistance – seventy-two hours of exposure time to UV light



UV resistance of décor paper is improved when replacing 5-15% of the TiO₂ with SIPERNAT® sodium aluminosilicate. ISO brightness & D65 brightness & L* lightness data in all cases show improved light fastness of décor paper.

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