SALES BROCHURE

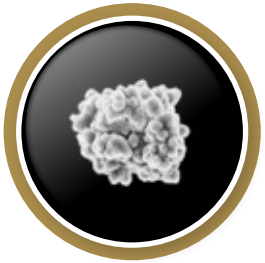
FP PIGMENTS

FP-860XB

OPACITY PIGMENT

July 2025

Version 2.3



FP-860XB

TiO_2 containing opacifying pigment

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Sold as an anionic high-solid slurry

FP PIGMENTS

PRODUCTS FOR PAPER & BOARD

SLURRY: **FP-860XB**

The FP-860XB is an engineered opacifying slurry for the most demanding fibre based applications. Our high-performance pigment is composed around the rutile form of TiO_2 and uses its high refractive index to create exceptional opacifying power and brilliant brightness. The pigments' unique spherical form and porous structure enable excellent light scattering properties. As its particle size is relatively large, FP-860XB is able to maintain critical strength properties and is therefore used also in filling applications. If your product needs the highest dry and wet opacity values, this product is your best choice.

PRODUCT

The FP-860XB slurry is manufactured with the most advanced dispersing technology, ensuring excellent rheology, machine runability and product stability. The commercial product is stabilised for a guaranteed shelf-life of three months. The optimised titanium dioxide content ensures high opacity values also in applications where the end product is thoroughly wet.

FEATURES

This product combines the benefits of two separate performance pigments: Our ultra-pure precipitated $CaCO_3$ and the rutile form of TiO_2. With their purity, spherical form and high porosity, our precipitated pigments are effective opacifiers in their own right. In the FP-860XB, the precipitated part and the TiO_2 unify their individual strengths for maximum opacity.

APPLICATIONS

- Wallpaper base
- Thinprint paper
- Recycled paper
- Recycled board
- Coated testliner
- Wetlaid synthetics

Label paper

Achieving high wet opacity in label papers is not an easy feat and even impossible without using opacifying pigments. As the refraction of light is altered in a wet paper, even a high dry opacity can be lost in the process. In order to guarantee a high level of wet opacity, we have developed TiO_2-based composite pigments such as the FP-860XB. This rutile-based slurry can effectively replace pure TiO_2 in coated label paper applications. The benefit to you: Significant cost savings when you replace pure TiO_2 with one of our FP Opacity Pigments.

Wetlaid synthetics

Impregnated and coated wetlaid nonwovens can be found in a multitude of applications where the end products are, either partially or totally, based on synthetic fibres. For example, permanently secure documents, base substrates for sandpaper or wallpaper, and advertising paper for backlit outdoor posters are products which combine synthetic fibres with the need for high opacity. FP-860XB can significantly reduce the amount of pure TiO_2 used in these applications, creating a potential for savings in raw material costs.

A good filler will deliver

Target of case study:

Suitability of different slurries in filling applications

Paper:

45 gsm, bleached virgin fibre

Ash content (450 °C)

8%

Chart 2: Achieved opacities (%) in filler applications

The chart above shows the immense potential in opacity increase when changing from a standard filler (GCC) to specialty pigments like FP-860XB. In the tested 45 gsm paper, even with the identical 8% ash content, the opacity could be raised by 10 absolute %-points. The chart on the right shows the measured scattering coefficient for the papers containing the said filler pigments. Compared to GCC and standard PCC grades, one can see a huge improvement in light scattering potential with our 860XB. The absorption coefficient "k" is practically identical in all of these grades, meaning that the difference in opacity values comes from the light scattering power of the pigments. At the same time, the brightness of the paper can be significantly improved.

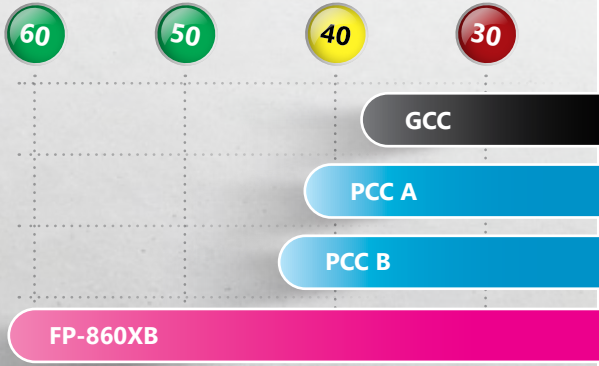
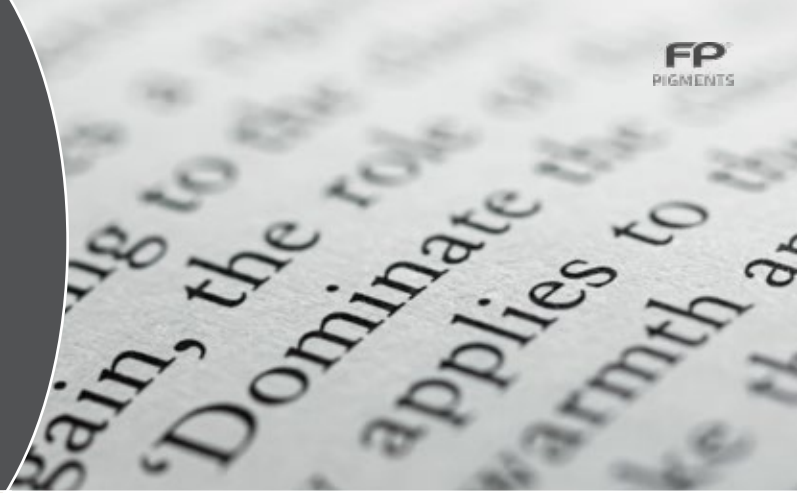


Chart 3: The scattering coefficient "s", given in m^2/g

Thinprint Paper

Thinprint paper is traditionally used in dictionaries, religious books and pharmaceutical packaging inserts. What these end products have in common: Lots of printed text packaged into the minimum of space. In these paper grades, the required opacity is often achieved at the expense of brightness, giving the paper a shade that is less than pure white. With FP-860XB, you can have both properties in one paper grade and combine excellent opacity with high brightness. As you only need a few gsm of solids for a full opacifying effect, the most common application method for this product is surface sizing.



Coated Testliner

A typical White Top Testliner consists of two plies; the greyish recycled content is "hidden" under a white ply made of more expensive, high-quality fibres. The same optical appearance, combined with improved printability and better cost structure, can be achieved with an opacifying coating. High-quality pigments guarantee constant optical properties, independent of the ever-changing quality of the recycled stock. When you need to maximise the hiding power of your coating, our FP-860XB gives you the brightness and printability you are looking for.

ENVIRONMENTAL BENEFITS

The Carbon Footprint of our composite pigment was assessed according to the Life Cycle Analysis ISO 14060/44. The CO_2 emissions of our production were compared to those of pure TiO_2. The results prove a CO_2 emission reduction of 60% compared to TiO_2. This helps to reduce your own footprint as well.

Perfect balance between high performance and economics

OUR COOKBOOK FOR HIGHER OPACITY

Taking a more detailed look at our specialty pigment, you would see that its rough and porous structure contains lots of air voids; These increase the diffraction of light and therefore the opacity. If improving opacity in a *dry* substrate is a relatively straightforward process, doing the same in *wet* substrates calls for another approach.

The key to wet opacity lays in the higher refractive index of TiO_2 particles; This enables effective light scattering even when the substrate is completely wet. However, in order to refract all wavelengths of visible light, the incorporated TiO_2 particles need to be optimally distanced from one another. If you take advantage of our composite structure, this distancing is done automatically; You no longer need to worry about TiO_2 crowding effects. Another benefit of the composite structure: The pigments' physical contact surfaces are composed of calcium carbonate. The abrasive rutile TiO_2 remains inside a softer shell, minimising the tear and wear on your machinery.

Due to its high light scattering and refractive power, the FP-860XB is not just a high-powered opacifier, but also a cost-effective replacement to pure TiO_2.

FP PIGMENTS

As in 2020, FP-Pigments was once again granted the Silver Recognition Level in the EcoVadis Corporate Social Responsibility rating.

Ranking corporations in terms of environmental and social performance, **Ecovadis** is a globally accredited measurement tool for sustainability.

EcoVadis is a trusted provider of business sustainability ratings, intelligence and performance improvement tools for global supply chains. The easy-to-use sustainability scorecards provide insight into environmental, social and ethical risks.

In 160 countries, there are over 75,000 businesses on the EcoVadis network. They all work with a single methodology to evaluate and improve their own sustainability performance.

WHO YOU CAN CALL...

FP-Pigments Oy
Mr. Esko Aarni
Ahventie 4 A 21-22
FIN-02170 Espoo
Finland
+358 400 789 200

FP-Pigments GmbH
Mr. Markus Blomquist
Am Haupttor 2176
DE-06237 Leuna
Germany
+358 40 8210419

FP-Pigments Inc.
Mr. Ilkka Tamminen
3 Southern Ind Blvd NW
Rome, GA 30165-2278
USA
+1 770 335 2492