



MAGNUM FILL™ PCC
MAGNUM GLOSS® PCC



We Have You Covered



Discovering what's possible with calcium

MAGNUM FILL™ PCC

MAGNUM GLOSS® PCC

We Have You Covered

Magnum Fill™ and Magnum Gloss® Precipitated Calcium Carbonate (PCC) products are designed by scientists at Mississippi Lime to provide optimum performance in coating applications. These products provide:

- Cost savings by reducing or extending TiO_2 use
- Functional benefits such as improved wet and dry hide
- Improved optical properties, including increased opacity and exceptional gloss development for semi-gloss coatings

The ability to control the crystal morphology, discrete particle size and particle distribution is the key to the high performance capabilities of Magnum Fill™ and Magnum Gloss® PCC.

COATING APPLICATIONS

The coatings industry is a globally competitive and dynamic market with continually increasing demands for higher performance and lower cost raw materials. The demands for higher performance in paints, inks and other coatings are focused on improved gloss development (for semi-gloss), wet and dry hide, touch up and water release while still reducing the manufacturer's overall raw material cost. Magnum Fill™ and Magnum Gloss® Precipitated Calcium Carbonates provide the performance and cost benefits that formulators demand.

PERFORMANCE BENEFITS AND COST SAVINGS AS A TITANIUM DIOXIDE EXTENDER

Although TiO_2 provides good performance in coating formulations, it is an expensive raw material. Significant savings can be realized by optimizing the use of TiO_2 in a formulation with

extender pigments. PCC is an excellent extender pigment and both Magnum Fill™ and Magnum Gloss® PCC offer a wide variety of benefits in terms of gloss development, brightness, opacity and viscosity. Magnum Fill™ and Magnum Gloss® PCC lower costs by reducing the usage of titanium dioxide in the formulation while obtaining specific performance benefits (see Figure 1).

Figure 1: Magnum Fill™ extends TiO_2 (flat paint)

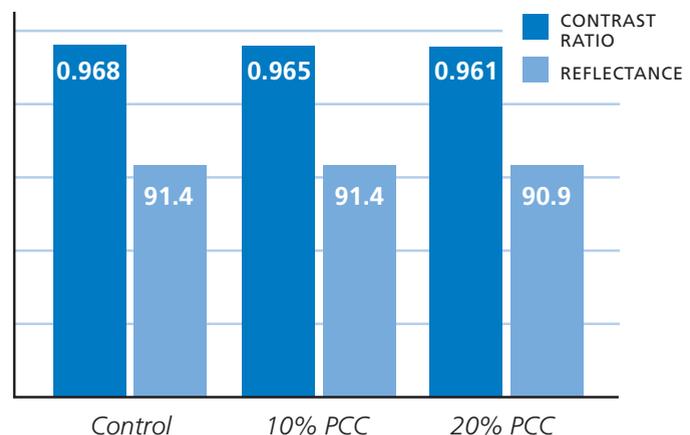


Figure 1 shows a flat paint formulation where Magnum Fill™ PCC was used to extend TiO_2 at both 10% and 20% replacement levels. The results in the figure show that both contrast ratio and reflectance of the flat paint were maintained.

PERFORMANCE BENEFITS AS A FUNCTIONAL FILLER

Calcium carbonates are versatile coating pigments used to improve the physical characteristics of finished products and reduce production costs. PCC is more than just a filler. Magnum Fill™ PCC provides excellent hiding power, high reflectance, stable viscosity and scrub resistance. Magnum Gloss® PCC provides high gloss, brightness, shade, coating strength and good rheology.

Figure 2: Lenetta draw down comparison

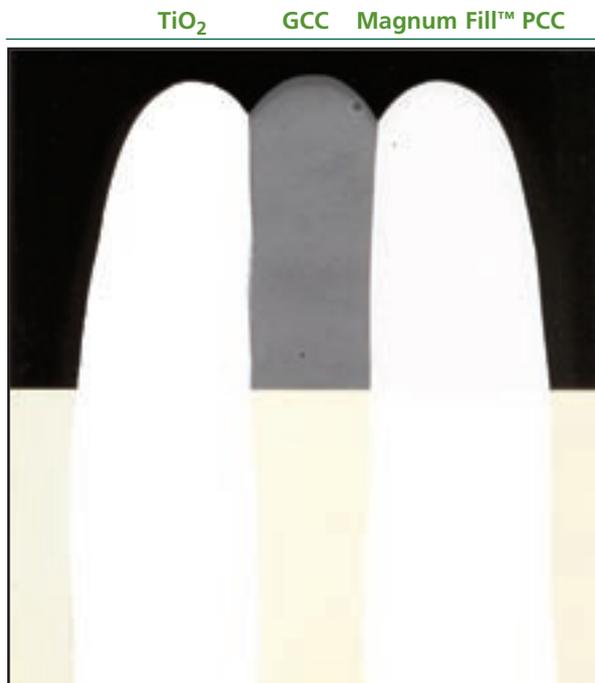


Figure 2 shows a draw down comparison of TiO₂, GCC and Magnum Fill™ PCC coating pigments. Magnum Fill™ PCC hiding power is apparent.

Particle size, shape, brightness, oil absorption and rheology all play significant roles in increasing the hiding power of the coating (see Figure 2). Particle size and shape should also play a critical role in the selection of the calcium carbonate material. Both Magnum Fill™ and Magnum Gloss® PCC are well suited, providing different particle sizes and oil absorption values.

ADVANTAGES OF MAGNUM FILL™ AND MAGNUM GLOSS® OVER OTHER COATING PIGMENTS

Mississippi Lime's Precipitated Calcium Carbonates are unique from other pigments due to our ability to control crystal morphology which allows the design of products with improved performance. Because PCC allows for improved particle packing which increases the interfaces and pore volumes of the coating, Magnum Fill™ PCC and Magnum Gloss® PCC have superior optical qualities when compared to natural calcium carbonates and clay products.

The Magnum Fill™ family of products is designed with a specific particle size distribution, particle shape and aspect ratio. As a result, Magnum Fill™ PCC has excellent performance compared to GCC and calcined clay on optical properties such as brightness and opacity. Magnum Gloss® PCC provides good gloss performance compared to premium clays and higher gloss performance than fine ground calcium carbonate (GCC) while still maintaining low oil absorption properties (see Figure 3).

Figure 3: Magnum Gloss® benefits gloss and shade (semi-gloss paint)

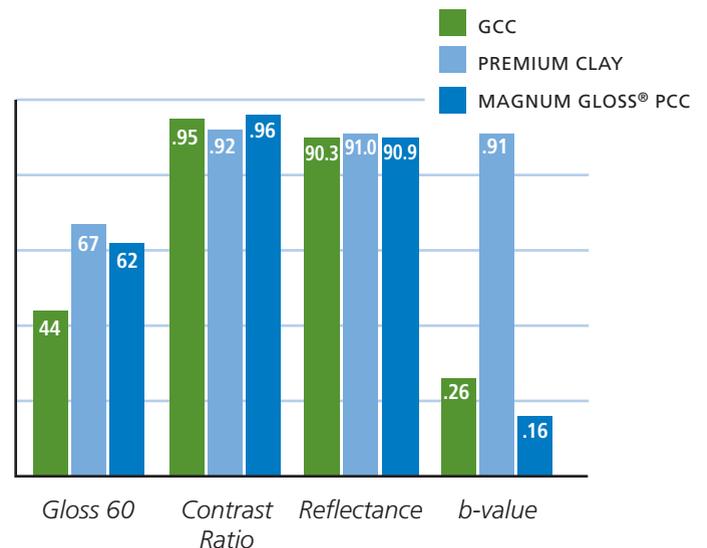


Figure 3 shows a comparison of several key semi-gloss paint properties using three common coating pigments. Magnum Gloss® PCC provided good gloss, improved contrast ratio and excellent shade (b-value) while maintaining reflectance.

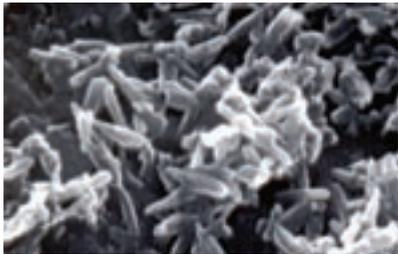
MAGNUM FILL™ PCC

MAGNUM FILL™ SLURRY

- Magnum Fill™ 50% Stabilized
- Magnum Fill™ 65% Stabilized

MAGNUM FILL™ POWDER

- Magnum Fill™ SD
- Magnum Fill™ SDL
- Magnum Fill™ M
- Magnum Fill™ HO97



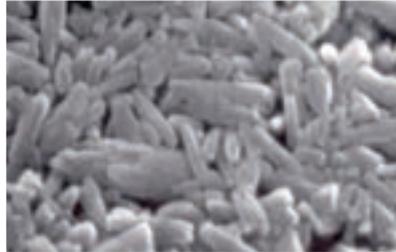
MAGNUM GLOSS® PCC

MAGNUM GLOSS® SLURRY

- Magnum Gloss® 72%

MAGNUM GLOSS® POWDER

- Magnum Gloss® SD
- Magnum Gloss® M



Magnum Fill™ and Magnum Gloss® Precipitated Calcium Carbonate Products are available in a broad spectrum of both physical and chemical attributes.

MISSISSIPPI LIME

Mississippi Lime's vision is to become the preferred supplier of calcium-based products and services in North America by solving customer problems and providing superior value. Mississippi Lime enjoys the unique position as a backward integrated producer of PCC. This integration includes one of the world's richest limestone (calcium carbonate) reserves, world-class lime manufacturing operations, specialized lime hydration technology and a time-tested PCC production facility.

Mississippi Lime is ready to support your application needs through in-house laboratory facilities offering coating technology research and analytical capabilities. In addition, Mississippi Lime has both a technical applications staff and highly technical sales force that will provide on site support to meet your requirements. Let Mississippi Lime work with you to achieve the best results.

At Mississippi Lime, we have you covered.



Discovering what's possible with calcium

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