Omya Polymers
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Omyaspace

A New Pigment Enhancement for the Masterbatch Industry

THINKING OF TOMORROW

A new pigment enhancement for the masterbatch industry

Omya is a leading global producer of calcium carbonate and a worldwide distributor of specialty materials actively working toward continuous improvement in environmental, social, and economic performance. Omya provides value-added products and services from responsibly sourced materials to meet the essential needs of current and future generations.

The polymer value chain is no exception to the continuous improvement in cost efficiency and supply chain optimization. Our main goal at Omya is to add customized value to the polymer industry. We develop new calcium carbonate grades to offer our polymer customers everyday functionality, profitability, and sustainability.

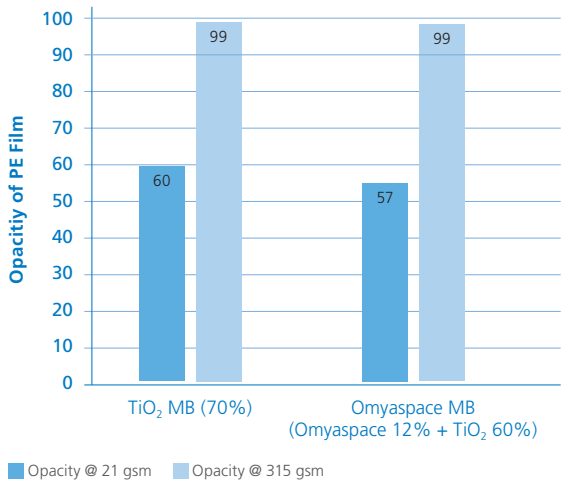
Omya products and solutions improve profitability by lowering raw material costs and increasing productivity. Omyaspace is a new family of mineral additives enhancing the dispersion of pigments in white and color masterbatches.

Omyaspace offers a force multiplier with dual action into the polymer matrix: An action of pigment extension and dispersion improvement, in addition to a self-opacity contribution, making it possible to improve and enhance the original pigment performance in the color masterbatch. While white masterbatches containing Omyaspace optimize hiding power and opacity, mainly when applied to film, sheet, and molded articles, which are great for flexible and rigid packaging and industrial applications. Masterbatch producers can improve their system's productivity or reduce costs while maintaining the efficiency of the product. Omyaspace supports the performance and quality of the TiO_2 and color concentrate. Increasing the efficiency of resources while enhancing pigment properties is not the only benefit Omyaspace offers.

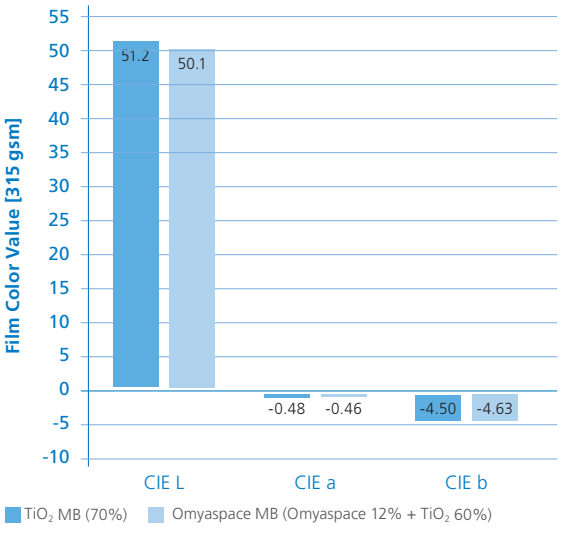
Omyaspace optimizes formulation cost of white masterbatch

In times of volatile prices for polymers and TiO_2, Omyaspace lowers and stabilizes the overall raw material and formulation cost. Add Omyaspace to the production process easily using conventional compounding methods. With the addition of approx. 12wt% Omyaspace significantly enhances the efficiency of TiO_2 and reduces the amount of petroleum-derived polymers.

Opacitiy of PE Film



Film Color Value - 315 gsm



Omyaspace helps save energy and increases the production output and quality

TiO_2 concentrates and masterbatches containing Omyaspace benefit from better pigment dispersion, improved opacity yield, and a higher compounding output. Omyaspace also enhances the quality of dispersion measured in terms of FPV (Filter Pressure Value).

Omyaspace helps save precious raw materials and resources

Depending on the polymer and type of application, Omyaspace is added up to a level of 12%wt, allowing optimization of the masterbatch's TiO_2 and petroleum-derived polymer content. Thus, facilitating the reduction of the primary pigment while maintaining similar opacity, whiteness, and tint strength of plastic items.

At the same time, compounders and converters that replace part of their primary pigment in their formulas with Omyaspace can expect reduced wear on their machinery and metal components such as screws, barrels, plastic film/sheets, and cutting knives. As calcium carbonate is far less abrasive than TiO_2 and other oxide pigments, it extends the life of extruders, slitting machines, and all metal tooling involved in manufacturing plastic articles.

Omyaspace is a natural, renewable and globally available resource

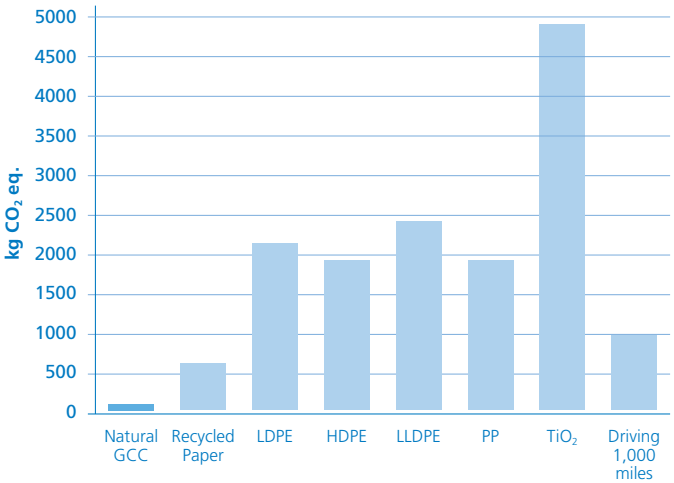
Omyaspace is a ground calcium carbonate. Calcium carbonates , such as limestone, marble and chalk are natural and renewable.

Marble and chalk are natural and renewable materials as defined by ISO 14021. Nearly 4% of the Earth's crust is composed of forms of calcium carbonate, one of the most common raw materials in nature. Continuously replenished by natural cycles in rivers, lakes, and oceans or formed as minerals, for example, from shells or skeletons. Commercial grades of Omyaspace are produced locally from widely available worldwide sources.

Omyaspace reduces the carbon footprint of polymer packaging and every plastic end-product

Since calcium carbonate is a naturally occurring mineral, it does not involve any energy-consuming chemical reaction. Therefore, the carbon footprint of calcium carbonate is substantially lower than that of any polymer resin. Moreover, calcium carbonate is a bio-mineralized or naturally produced resource, constantly renewed by various natural processes, ensuring that reserves are available for many future generations. The replenishment rate (according to the ISO 14021 definition) exceeds the consumption rate. Therefore, calcium carbonate meets the criteria for a renewable material.

White or color masterbatches that contain Omyaspace, a natural ground calcium carbonate, feature lower CO_2 emissions and help to improve the overall environmental footprint of the polymer industry.



Sources: IMA; FEFCO; ACC Plastics LCI Database, Table AD-S and TDMA 2016 report

Low carbon footprint

Carbon footprint of $CaCO_3$

54 kg of CO_2 equivalents emitted per ton of natural ground Calcium Carbonate (GCC) produced

SOURCE: IMA/CCA LCA update 2021, reference product GCC dry ultrafine

Omyaspace Benefits

- *Higher productivity*
- *Formulation cost optimization*
- *Higher pigment efficiency*
- *Better pigment dispersion*
- *Less abrasion*
- *Lower carbon footprint*

Functionality *Profitability* *Sustainability*

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Source: Omya International (2022/09) EN