Omya's opacity toolkit

Achieving affordable opacity in sustainable coatings



Boost opacity in paints & coatings with Omya's dedicated portfolio.

Opacity-enhancing solutions designed to improve coverage efficiency and reduce the number of coats required. Our technologies support formulators in optimizing pigment dispersion, light-scattering performance, and overall hiding power, helping you achieve consistent results while improving cost efficiency, sustainability, and application performance.

Category	Goal	Benefit	Company	Grades
Pigment	Opacity for white/bright shades: highest possible opacity and brightness using best-in-class TiO_2 pigments.	High refractive index and light-scattering efficiency with TiO_2, allowing superior hiding power.	Chemours™	Ti-Pure Interior: R-900, R902+ Exterior: R-706, TS-6200, TS-6300
Functional Minerals	Optimizing opacity in balance with formulation cost and carbon-footprint carbon footprint.	Functional minerals enable proper particle spacing, enhancing light scattering and preventing re-agglomeration of TiO_2 particles.	OMYA	Calcium carbonate Dry: Omyacarb UF (UFGCC) Omyabrite (MCC) Slurry: Omyaspace 400 (UFGCC)
Kaolin clay	Mineral-enhanced opacity.	Kaolin enhances opacity through its fine particle size, high whiteness, and efficient light-scattering properties.	Thiele TAILORED MINERAL SOLUTIONS	OPAMAX calcined high-brightness kaolin KAOPRIME water-washed kaolin KAOPLATE
Dispersing agents	Ensure optimized opacity with best particle dispersion.	By deflocculating and evenly dispersing pigment particles, dispersing agents improve light scattering and maximize opacity, boosting the efficiency of costly organic pigments.	BYK	Antiterra 250 DISPERBYK-190 / 191 / 199 DISPERBYK-2018 / 2080 / 2180 BYK 349 (surface additive)
Rheology modifiers	Maintain consistent film build contributing to opacity.	Rheology additives provide broad shear-range control for Newtonian, pseudoplastic, or thixotropic flow, while improving anti-settling, sag and spatter resistance, and overall storage stability.	BYK	RHEOBYK 7610 RHEOBYK H6500 VF RHEOBYK T1010 VF OPTIGEL WX, WH or LX OPTIGEL 7601

A full offering package to take you the extra mile

Category	Goal	Benefit	Companies	Grades
Functional Minerals	Effective spacing of TiO_2 and colored pigments.	Help with chemical resistance and durability along with opacity.	SACHTLEBEN MINERALS	BLANC FIXE synthetic barium sulfate.
Pigment	Can be used to partially substitute TiO_2.	Help with chemical resistance and durability along with opacity.	SACHTLEBEN MINERALS	LITHOPONE co-precipitated zinc sulfide and barium sulfate.
Pigment	Colorful opacity with inorganic pigments.	Iron oxide pigments range from opaque to transparent based on particle size. Opaque grades give durable, lightfast color, while nano-sized versions offer high transparency, strong saturation, and UV protection.	ChemiK	HYROX-TECH synthetic iron oxide pigments.

Opacity, hiding powder and the factors which influence them



Pigment content

The more white pigment the paint contains, the better the coverage effect. Titanium dioxide (TiO_2) for example, is one of the most effective.



Refractive index

Differences in refractive index between pigments, fillers, and binders cause light to scatter. The more the light changes direction, the less visible the surface underneath becomes, increasing the coating's opacity.



Mineral and extender

The right combination of type and particle size of extender and minerals can create a higher opacity effect.



PVC concentration

A higher concentration of pigment (PVC value, or Pigment Volume Concentration) improves the dry hiding effect, enhancing the coating's opacity.



Spacers

The dispersibility of pigments, supported by special particles or additives, prevents their flocculation and keeps TiO2 particles well separated, improving opacity.



Coverage

Coverage, measured in square meters per liter, depends on the applied layer, which also affects opacity: thicker layers deposit more pigment, improving hiding.



Rheology

The rheology of the paint influences the application and therefore the film thickness. Better leveling contributes to optimal coverage.



Binder type

The choice of binder can have an impact on all factors and components, resulting in a better or lower opacity.

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