Ti-Pure™ R-960 Titanium Dioxide

Grade Snapshot

Product Information

Product Description

Ti-Pure™ R-960 is a rutile titanium dioxide pigment, manufactured by the chloride process that produces the brightest white TiO_2 delivered as a fine, dry powder. Ti-Pure™ R-960 provides proven protection in the most demanding and unforgiving environments. Ti-Pure™ R-960 is designed with a silica encapsulation for photodurability and an alumina surface coating that improves bulk conveying and facilitates TiO_2 wet-in. This pigment is free from organic surface treatments resulting in zero volatile organic compounds (VOCs) that may be undesirable in some coating formulations.

Ti-Pure™ R-960 is available in 25 kg bags and semi-bulk containers (approximately ½ and 1 metric ton).

Key Features

- Exceptional durability, providing chalk fade resistance and outstanding color retention to extend coating lifetime and appearance.
- Proven performance in the most demanding and unforgiving weather and industrial environments
- Surface design that provides excellent film cure in acid-catalyzed coatings
- Surface design that resists photocatalysis and UV degradation, protecting the coating's performance and appearance

Suggestions For Use

Because of its outstanding exterior durability and proven track record for over 50 years, Ti-Pure™ R-960 is the pigment of choice for critical performance and extended life applications including automotive OEM topcoat and refinish; durable exterior coil coatings; aerospace coatings; powder coatings; durable industrial OEM and specialty coatings; and intense color applications, such as bridges and airplanes, which depend on the coating's mechanical integrity to last a very long time.

Automotive Refinish Topcoats

Automotive topcoats demand outstanding initial optical performance and need to maintain this appearance through extreme weather conditions. Ti-Pure™ R-960 adds batch-to-batch consistency, color stability, gloss retention, and UV protection to automotive coatings. When your reputation is at stake, count on Ti-Pure™ R-960 to deliver the performance consumers expect.

Protective Coatings

Most protective coatings, such as those using fluorinated polymer systems, are inherently resistant to environmental conditions and rely on TiO_2 to meet target optical properties without compromising the useful life of the film. For this reason, protective coating producers need proof that their TiO_2 will last as long as their films. No TiO_2 has a longer history of proven performance than Ti-Pure™ R-960.

Chemours™

Table 1. Physical Properties

Property	Ti-Pure™ R-960
TiO_2, wt%, min.	90
Alumina, wt%	3.3
Amorphous Silica, wt%	5.5
Specific Gravity	3.9
Bulking Value, L/kg (gal/lb)	0.255 (0.031)
Organic Treatment	No
Color CIE L*	99.9

Note: All values are typical unless otherwise specified.

Figure 1. Paint Degradation Pathways

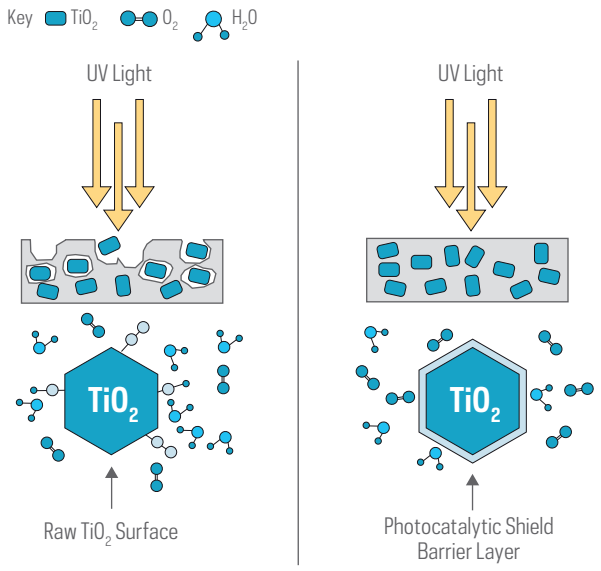
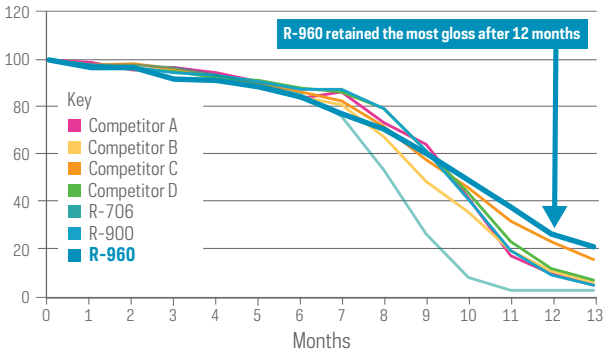


Figure 1a. **Figure 1b.**

Color Retention

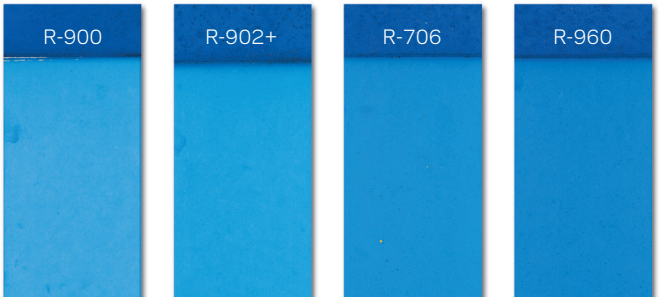
Ti-Pure™ R-960 provides durability by preventing two major paths for film photodegradation. First, the rutile TiO_2 core of R-960 absorbs UV light, preventing direct UV degradation. In a non-durable grade of TiO_2 (**Figure 1a**), this absorbed UV light, with the help of air or water at the TiO_2 surface, could still catalyze film degradation, but R-960 is designed to prevent this second degradation path as well, by using a silica barrier layer that interrupts the chain of reactions that cause film failure (**Figure 1b**). As a result, R-960 will protect film appearance, including excellent performance in both chalk fade and gloss retention tests.

Figure 2. Auto Refinish %Gloss Retention 13 Month EMMAQUA Exposure



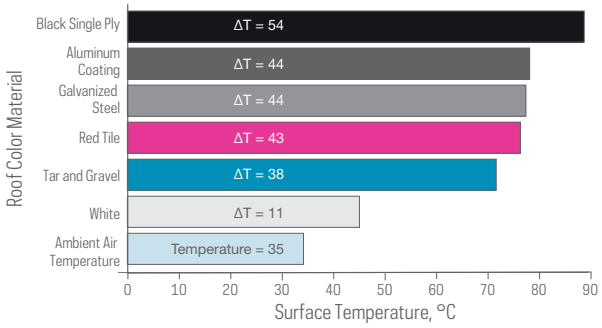
The benchmark durability of R-960 continues to outperform competitive durable grades, with significantly better 60 degree gloss performance in this durable Automotive Refinish formulation (**Figure 2**).

Figure 3. Outdoor Exposure Test — Florida



The Ti-Pure™ R-960, with increased surface silica content, provides longer integrity of paint films and extended color retention in durable coating applications. Images taken at 1 year South Florida exposure in a alkyd formula dramatically show how the silica treatment on R-960 provides superior color retention compared to other grades (**Figure 3**).

Figure 4. Impact of Color on Surface Temperature



The surface temperature of white roofing made with Ti-Pure™ R-960 remains cooler than other materials.

For more information, visit tipure.com

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