



Ti-Pure™
R-105 Titanium Dioxide

Grade Snapshot

Product Information

Product Description

Ti-Pure™ R-105 is a rutile titanium dioxide pigment, manufactured by the chloride process that produces a bright white TiO_2 , and is delivered as a fine, dry powder. Ti-Pure™ R-105 is designed to extend the appearance and lifetime of outdoor plastic applications. It is the preferred choice for ultra-durable performance.

Ti-Pure™ R-105 includes a unique particle design that minimizes interaction between the TiO_2 surface and the plastic matrix, provides excellent bulk flow and processing, all while minimizing the hygroscopic nature of inorganically coated TiO_2 .

Available in 25 kg bag, 1 metric ton (1000 kg) FIBC, or bulk truck in EMEA region.

Key Benefits

- Ultra-durable performance to extend the appearance and lifetime of outdoor goods
- Superior gloss retention so products maintain their original appearance
- High reflectivity that harnesses the power of light and maintains cool surfaces without deformation
- Maximum brightness for ultra-white or light colors
- Superior particle dispersion quality during compounding compared to competitive grades
- Excellent bulk flow, ideal for storage and flow from silos
- Suitable for use in food contact applications

Suggestions For Use

Ti-Pure™ R-105 is frequently found in exterior plastic building products such as composite or vinyl siding, window profiles, decks, and fences; cool roofing membranes; and durable exterior polyethylene or Ti-Pure™ polypropylene films such as agricultural films.



Building Materials and Cool Roofing Membranes

Exterior plastic building products demand ultimate durability to protect against the ravages of nature's elements. Ti-Pure™ R-105 combines neutral undertone and moderate opacity for easy color formulation delivering beautiful bright colors. This along with ultra-durable performance and long-term gloss retention result in peace of mind for consumer applications where appearance is critical. Roofing membranes made with Ti-Pure™ R-105 have a consistent ambient temperature inside even when the weather is hot and sunny. This saves energy and can reduce a building's carbon footprint.

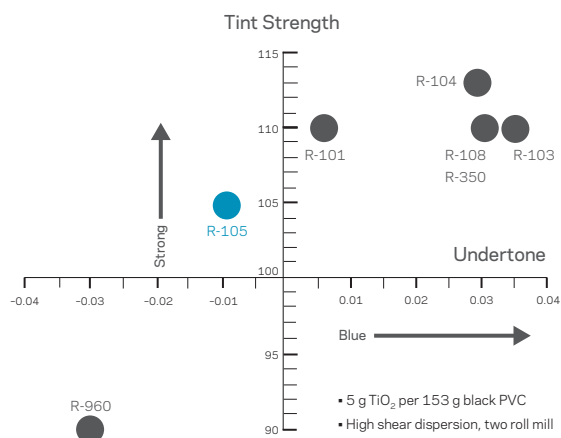
Durable Agricultural Films

Agricultural films must withstand the elements without decaying or failing. When film producers use Ti-Pure™ R-105, they reduce waste by creating thinner, more reflective mulch films that resist UV degradation. Silage bags, greenhouse walk-in tunnels and geomembranes made with Ti-Pure™ R-105 have greater reflectivity, durability and opacity that extends the lifetime of agricultural films.

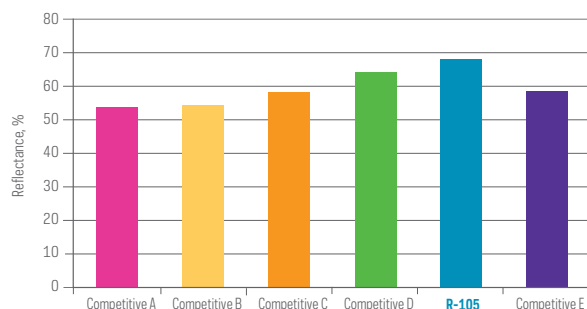
Table 1. Physical Properties

Property	Ti-Pure™ R-105
Titanium Dioxide, wt%, min.	92
Alumina, wt%, max.	3.2
Silica, wt%, max.	3.5
Carbon, wt%	0.2
Specific Gravity	4.0

Note: All values are typical unless otherwise specified.

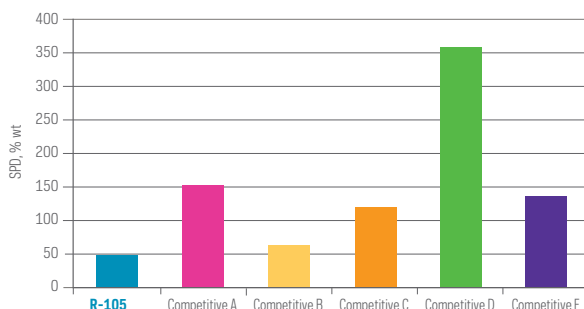
Figure 1. Optical Properties

Ti-Pure™ R-105 offers an unmatched combination of brightness, neutral undertone and highest tinting strength among durable grades.

Figure 2. Solar Reflectance

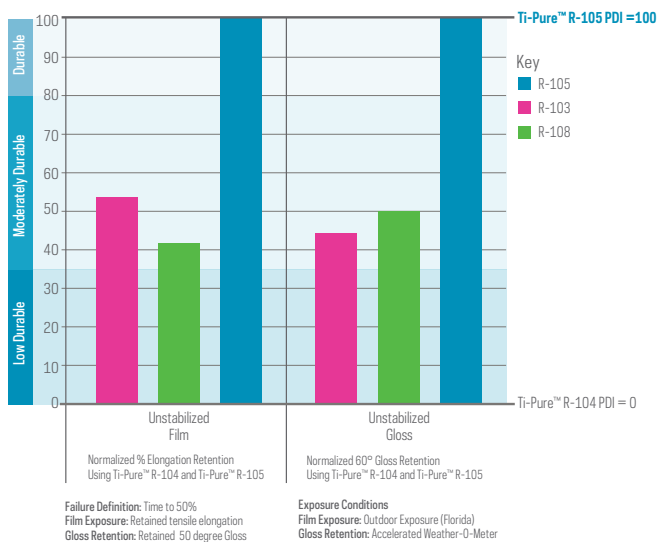
UV-VIS-NIR spectrophotometer with integrating sphere for Total Solar Reflectance (ASTM G-153).

Ti-Pure™ R-105 stands out in delivering high solar reflectivity along with significant cooling benefits for outstanding performance in your exterior building products.

Figure 3. Screenpack Dispersion (SPD)

Note: the lower the number the better dispersion performance

Ti-Pure™ R-105 has superior dispersion performance within the polymer matrix during compounding compared to competitive grades.

Figure 4. Photodurability Index

Note: This chart shows the photodurability index of agricultural films exposed for 30 months in Florida. It shows the film tensile strength and gloss retention as a function of exposure time. Ti-Pure™ R-105 shows the highest durability compared to other grades."

Ti-Pure™ R-105 utilizes silica encapsulation technology to minimize interaction of the TiO₂ surface with the surrounding polymer matrix and to reduce photocatalytic activity. This minimizes "chalking" and other surface deterioration effects that frequently occur in outdoor applications.

For more information, visit tipure.com

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