Ti-Pure™
R-103 Titanium Dioxide

Product Information

Product Description

Ti-Pure™ R-103 is a rutile titanium dioxide pigment manufactured by the chloride process. Its high opacity and very blue undertone tint produces clean, bright whites at low loadings in clear resins and those having natural color. Ti-Pure™ R-103 is specially formulated to reduce discoloration of resin compounds and finished plastic products during processing and exposure to ultraviolet light.

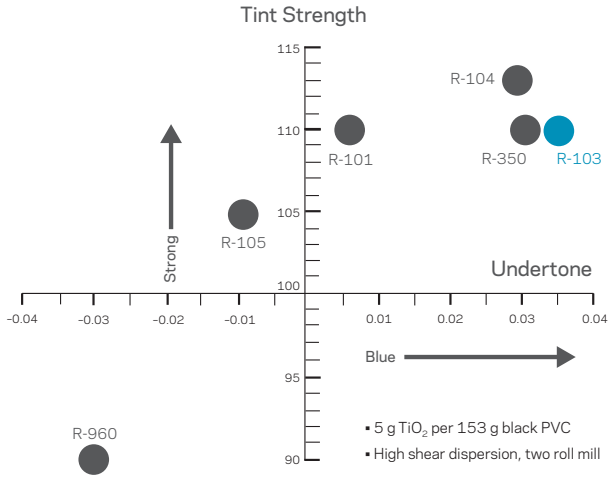
Table 1. Physical Properties

Titanium Dioxide, wt%, min.	96
Alumina, wt%, max.	3.2
Organic Treatment, wt%, carbon	0.2
Specific Gravity	4.1
pH (aqueous slurry)	6.5
Resistance (aqueous slurry), k ohm-cm, min.	4

Table 2. General Properties

Opacity Strength	High
Undertone Tint	Very Blue
Dispersibility in:	
Plasticized Vinyl	Very Good
Plasticizers	Fair
Dry Blending Operations	Good
Melt Compounding	Excellent
Flocculation Resistance	Very Good
Discoloration Resistance	Excellent
Weathering Resistance	Good

Figure 1. Optical Properties



The exceptional blueness of Ti-Pure™ R-103 is of particular value in naturally colored resin systems like ABS. As much as 30% less TiO_2 can be used to achieve finished product requirements compared to neutral undertone pigments (**Figure 2**).

The unique alumina surface treatment of Ti-Pure™ R-103 provides excellent discoloration resistance.

The volatility of R-103 allows acceptable processing in all applications except high temperature thin PE cast film or PE extrusion coating. For these demanding applications, Ti-Pure™ grades R-101, R-104, or R-350 are recommended.

Chemours™

Ti-Pure™ R-103 is excellent in polyolefin or engineering resin applications requiring high opacity strength, very blue tint, excellent dispersion, and discoloration resistance. Ti-Pure™ R-103's surface treatment allows its use in lead-stabilized PVC systems, while still providing controlled chalking in exterior PVC applications.

Ti-Pure™ R-103 surface treatment makes it a preferred choice in liquid systems such as plastisols, liquid colorants, etc. Its blue tinted value and high tint strength in plastics products coupled with its ease of dispersion into liquid systems makes Ti-Pure™ R-103 a very good grade for liquid colorant concentrates, flexible PVC, and PVC plastisol applications.

Figure 2. Value of Blue Undertone in "Colored" Resin Exhibits Prepared in Cycloac® TD 1001 ABD

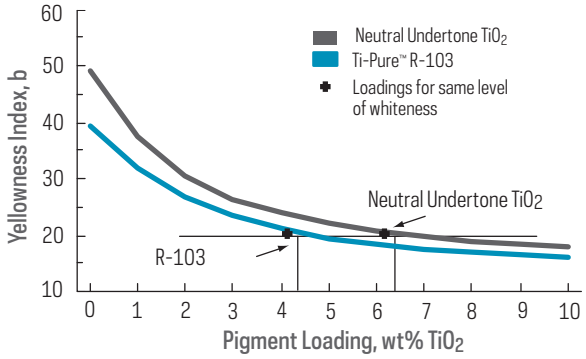
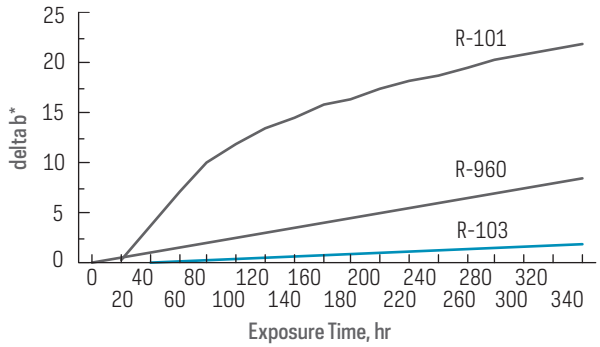
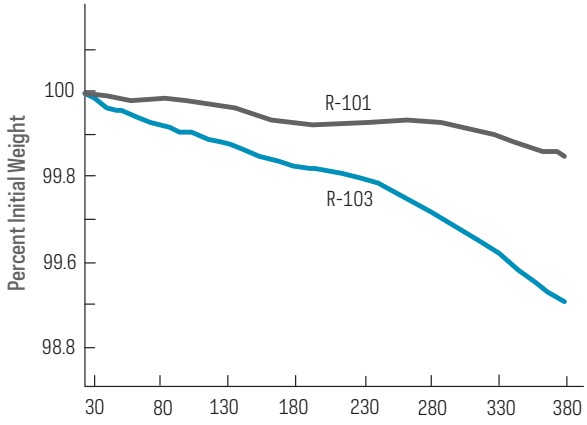


Figure 3. Ti-Pure™ R-103 Discoloration Resistance in HALS Stabilized LDPE



*Delta b as a function of UV exposure time. The test was conducted on LDPE with 2.6% by weight TiO_2. The system was stabilized with 0.3% piperidyl HALS and 0.3% BHT. Exposure was made using an F15T8/BLB blacklight illuminating the samples at 25 cm.

Figure 4. Thermo-Gravimetric Measurement of TiO_2 Volatility



Perkin-Elmer TGA7

Shipping Containers

Ti-Pure™ R-103 rutile titanium dioxide is available in two recyclable package types to meet your needs:

- 25 kg polyethylene bags
- 1 metric ton (1,000 kg) flexible intermediate bulk containers

Ti-Pure™ R-103* is listed with NSF International for use in plastic pipe products.

For further information about this grade or to request a sample, please see the Ti-Pure™ web site.

* Contact your Chemours Representative prior to assessing or using this product for NSF-certified applications to ensure application-specific compliance. NSF certification is not available for this product in the EMEA and Asia Pacific regions.

For more information, visit tipure.com

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