

DuPont™ Ti-Pure® R-103

TITANIUM DIOXIDE

Product Description

DuPont™ 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.

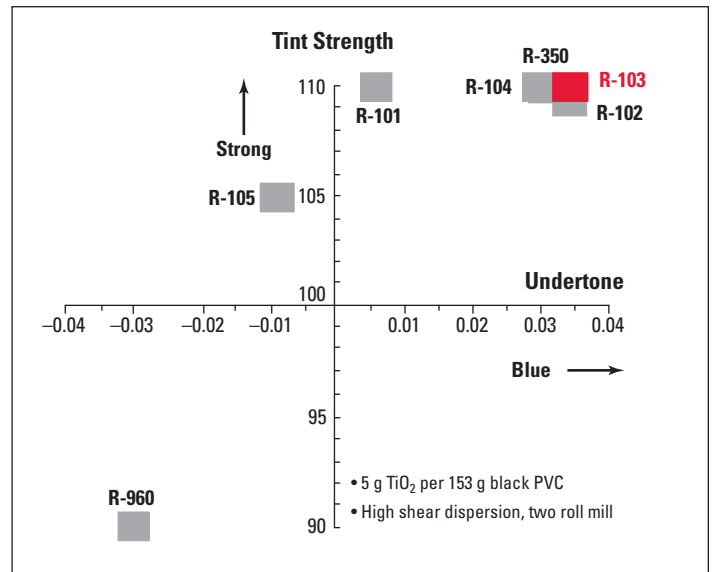
Table 1
Physical Properties

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

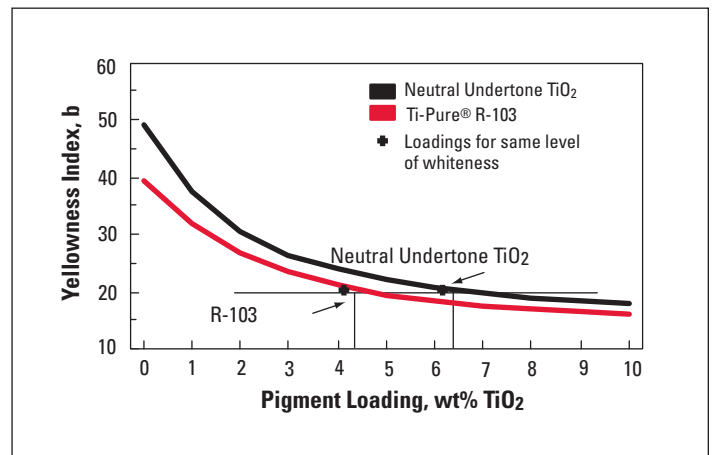
Opacity Strength	High
Undertone Tint	Very Blue
Dispersibility in:	
Plasticized Vinyl	Very Good
Plasticizers	Fair
Dry Blending Operations	Good
Melt Compounding	Excellent
Flocculation Resistance	Very Good
Discoloration Resistance	Excellent
Weathering Resistance	Good

Figure 1. Optical Properties



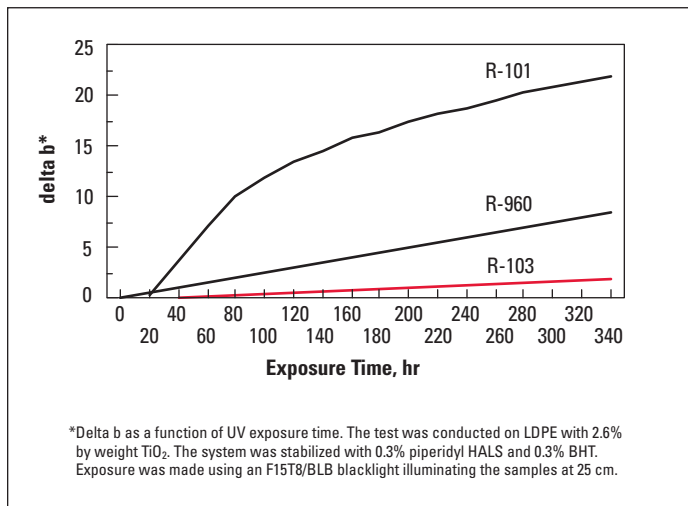
The exceptional blueness of Ti-Pure® R-103 is of particular value in naturally colored resin systems like ABS. As much as 30% less TiO₂ can be used to achieve finished product requirements compared to neutral undertone pigments (**Figure 2**).

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



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

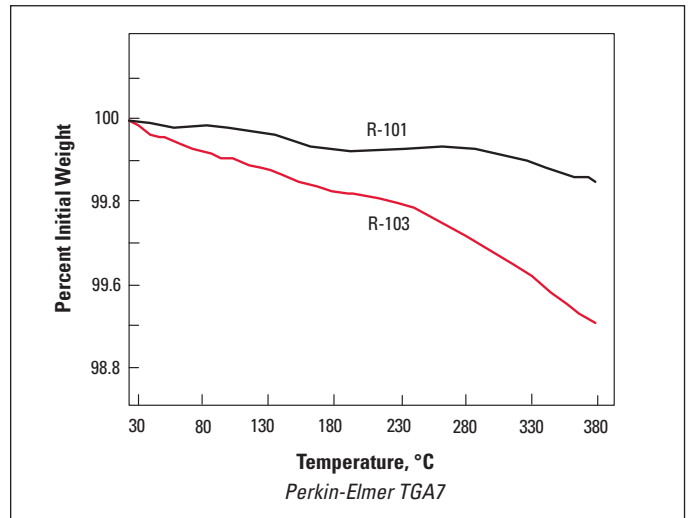
Figure 3. Ti-Pure® R-103 Discoloration Resistance in HALS Stabilized LDPE



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.

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

Figure 4. Thermo-Gravimetric Measurement of TiO₂ Volatility



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 DuPont Titanium Technologies web site.

DuPont Titanium Technologies

www.titanium.dupont.com

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