



Ti-Pure™

R-101 Titanium Dioxide

Product Information

Product Description

Ti-Pure™ R-101 is a rutile titanium dioxide pigment manufactured by the chloride process. It is excellent for high-temperature plastics applications requiring outstanding dispersibility and lowest possible volatility. The grade is a fine, dry, white powder with the following general properties.

Table 1. Physical Properties

Titanium Dioxide, wt%, min.	97
Alumina, wt%, max.	1.7
Organic Treatment, wt%, carbon	0.2
Specific Gravity	4.2
Mean Particle Size, µm	0.29
pH (aqueous slurry)	8.5
Resistance (aqueous slurry), k ohm-cm, min.	2

Suggestions for Use

Ti-Pure™ R-101 is designed primarily for plastic applications. Ti-Pure™ R-101 provides high opacity with a neutral undertone (**Figure 1**).

The low level of surface treatment on Ti-Pure™ R-101 gives it excellent dry blend dispersion. **Figure 2** demonstrates relative opacity strength of pigments for simple tumble blending versus high shear dispersion.

Figure 1. Optical Properties

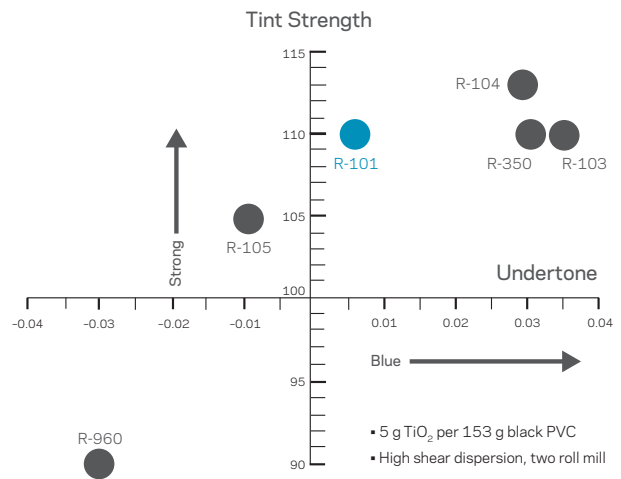
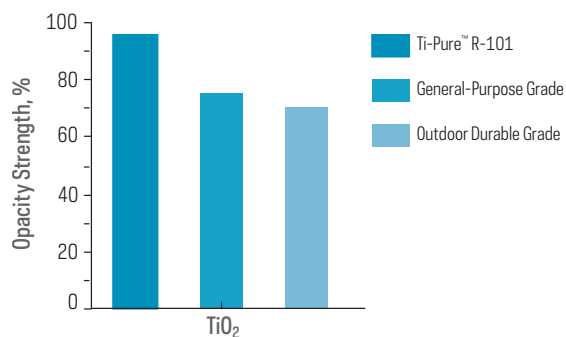


Table 2. General Properties

Opacity Strength	High
Undertone Tint	Neutral
Dispersibility in:	
Plasticized Vinyl	Good
Plasticizers	Fair
Dry Blending Operations	Excellent
Effect on Melt Flow	Minimal
Melt Compounding Operations	Excellent
Weathering Resistance	"Chalking" Grade in PVC Use

Figure 2. Dry Blend Dispersion Performance

A major advantage of Ti-Pure™ R-101 is its low level of crystalline and surface adsorbed water. This characteristic gives superior performance in high-temperature polyolefin extrusion coating operations sensitive to lacing. The very low volatility of Ti-Pure™ R-101 is reflected in **Figures 3** and **4**.

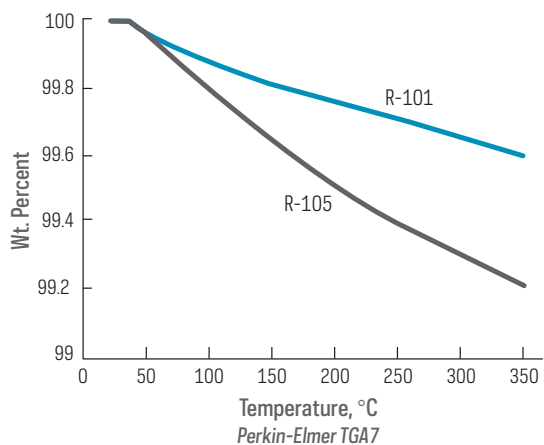
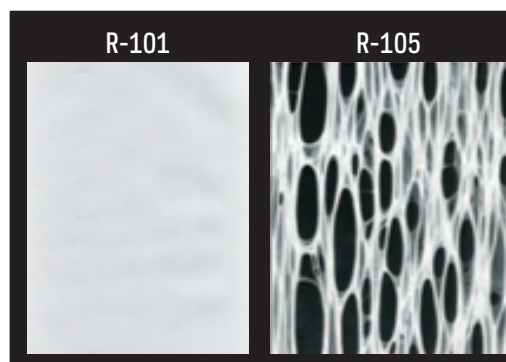
Shipping Containers

Ti-Pure™ R-101 rutile titanium dioxide is available in two recyclable package types:

- 25 kg polyethylene bags
- 2,000 lb (907 kg) flexible intermediate bulk containers

Ti-Pure™ R-101 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.

Figure 3. Thermogravimetric Measurement of TiO₂ Volatility**Figure 4.** Ti-Pure™ Titanium Dioxide Lacing Resistance

15% TiO₂ in Low Density Polyethylene
Extruded at 316 °C (600 °F), 1.5–2 mil Thick

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