

DuPont™ Ti-Pure® R-350

TITANIUM DIOXIDE

Product Description

DuPont™ Ti-Pure® R-350 is designed to exceed today's expectations for a titanium dioxide and set tomorrow's standard in plastics formulations. The product is designed for formulators searching for a single grade of TiO₂ with performance covering a broad range of plastics end uses. R-350 provides a matchless combination of excellent dispersion and processing, minimal volatile content, minimal interaction with polymer additives, durability and the brightness only a chloride-produced rutile TiO₂ can provide. R-350 is the only TiO₂ available that can offer such an exceptional set of properties.

The pigment is a fine, dry, white powder with the following general properties:

Physical Properties

Titanium Dioxide, % wt min	95
Specific Gravity	4.1
L*, Typical	99.0

Suggestions for Use

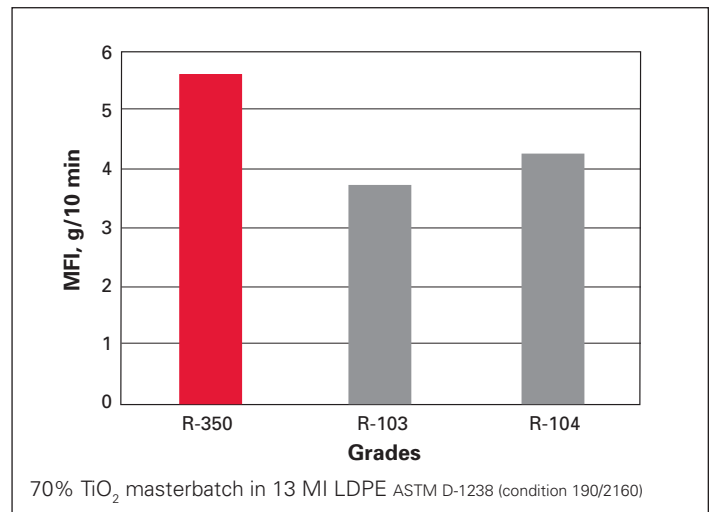
Ti-Pure® R-350 is optimized for polyolefin and ABS applications. R-350 allows a plastics formulator to design products that can be used in diverse applications ranging from general purpose plastics, durable/non-durable plastics and high quality products with critical end use applications. R-350 demonstrates excellent dispersion, marvelous processibility, exceptionally low volatility and enhanced durability. This combination of functions in one TiO₂ make R-350 the prime choice for high temperature cast films, exterior films and general purpose applications while providing excellent assurance against discoloration.

DuPont Titanium Technologies pioneered the development of products that provide high opacity and blue undertone. This optical performance is something that is expected from DuPont TiO₂ products. R-350 continues DuPont Titanium Technologies' commitment to produce a TiO₂ that can provide bright blue and clean appearance to plastics.

The Ti-Pure® R-350 surface allows for exceptional processing even in highly loaded TiO₂ PE systems. Unique R-350 chemistry permits the product to achieve desirable masterbatch viscosities

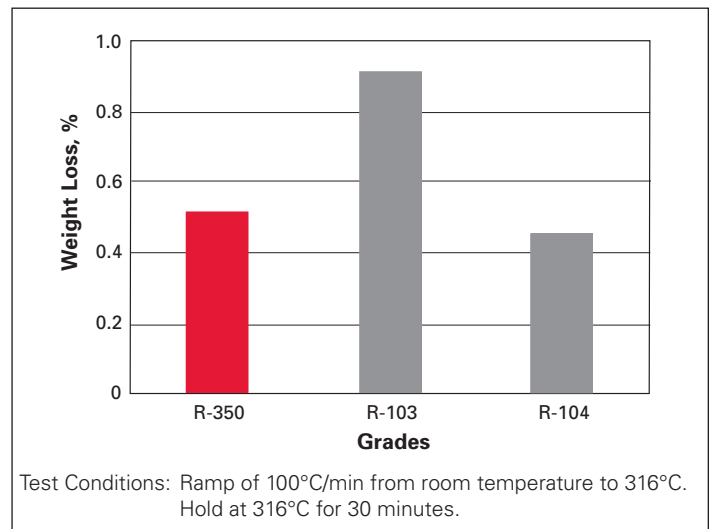
in a wide variety of polyolefin based resins. This function allows a formulator to minimize the TiO₂ impact on melt properties during processing and end use applications (**Figure 1**).

Figure 1. Melt Flow Index (MFI)



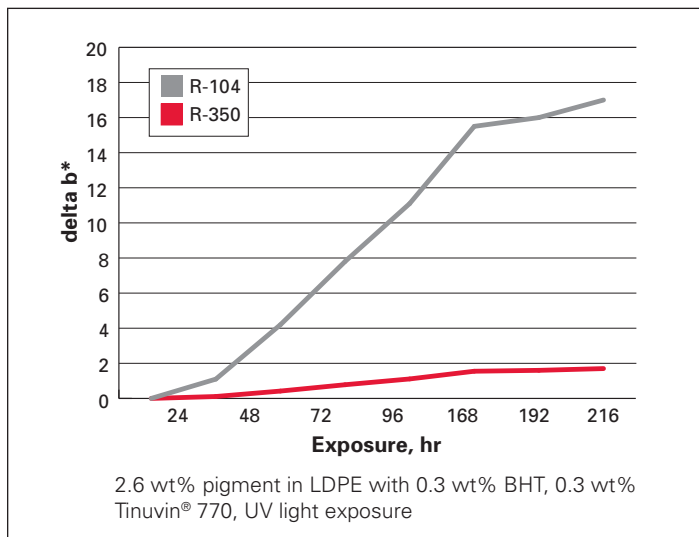
The unique surface of Ti-Pure® R-350 minimizes volatile materials typically associated with TiO₂. Thermogravimetric Analysis (see **Figure 2**) highlights the low level of volatiles contained in R-350. This characteristic gives R-350 superior performance in high temperature, thin gauge extrusion applications such as polyolefin cast film or extrusion coating.

Figure 2. High Temperature Weight Loss



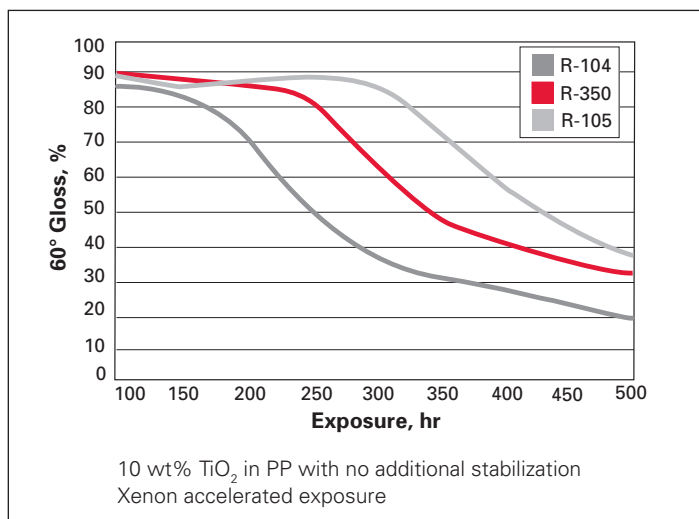
Another benefit from using DuPont™ Ti-Pure® R-350 is the ability to use the TiO₂ in combination with materials that tend to discolor. Certain polymer additives can interact with a TiO₂ surface. Under UV light illumination, this interaction can lead to discoloration. The R-350 chemistry minimizes the risk of discoloration. (see **Figure 3**).

Figure 3. Polyethylene Discoloration



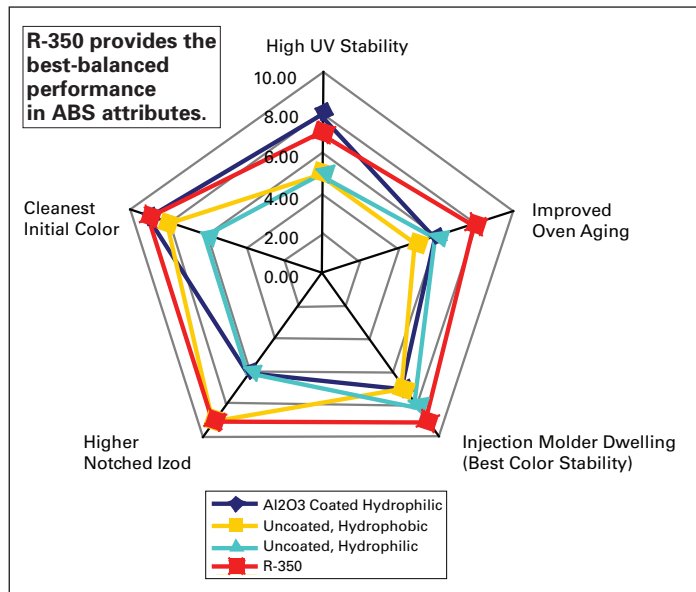
Ti-Pure® R-350 has the ability to absorb ultraviolet light with minimal impact on the polymer matrix. A means of determining the impact is to monitor the change in surface gloss of a plastic article during ultraviolet exposure. Typically, the surface gloss of an article will decrease as exposure time increases (see **Figure 4**). R-350 performs admirably in comparison to general purpose TiO₂ and provides the durability necessary for many polyolefin applications.

Figure 4. Polyolefin Gloss Retention



In ABS resin applications, R-350 provides a bright clean initial color. R-350's unique surface treatment gives excellent thermal and UV stability, helping to maintain that brand new look. The superior dispersion of R-350 allows ABS to better retain mechanical impact properties in demanding applications. R-350 provides the optimal blend of performance in ABS (**Figure 5**).

Figure 5. ABS Performance – Summary Data



Packaging

Ti-Pure® R-350 rutile titanium dioxide is available in 25 kg polyethylene bags, and one metric ton (1000 kg) containers.

For further information about this grade or to request a sample, please see the DuPont Titanium Technologies web site.

www.titanium.dupont.com

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