

# DuPont™ Ti-Pure® R-706

## TITANIUM DIOXIDE

### Product Description

DuPont™ Ti-Pure® R-706 is a universal rutile titanium dioxide pigment, manufactured by the chloride process, that is designed to deliver both high gloss and excellent durability in coatings. This outstanding combination of end-use performance properties makes it a versatile pigment in solvent and waterborne systems for architectural, industrial, and automotive applications. Ti-Pure® R-706 has the following general properties.

**Table 1**  
**Analysis and Physical Properties of Ti-Pure® R-706**

Property	R-706
TiO <sub>2</sub> , wt%, min.	93
Alumina, wt%	2.5
Amorphous Silica, wt%	3.0
Specific Gravity	4.0
Bulking Value, L/kg (gal/lb)	0.25 (0.03)
Organic Treatment	Yes
Color CIE L*	99.4
Median Particle Size, µm	0.36
Oil Absorption	13.9
pH	8.2
Resistance at 30°C (86°F) (1,000 ohm)	10
Carbon Black Undertone	14.5

**Note:** All values are typical unless otherwise specified.

### Key Features

- High gloss
- Super durability
- Excellent dispersibility
- Easy wet-in
- Good hiding
- Blue undertone

### High Gloss

Careful control of the TiO<sub>2</sub> particle size during manufacture of R-706 results in exceptional gloss performance. R-706 has a tight particle size distribution, resulting in less oversized particles that detract from gloss.

### Super Durability

Unique encapsulation of the TiO<sub>2</sub> particle by a continuous coating of silica (SiO<sub>2</sub>) is responsible for the excellent durability of R-706. Florida exposure data for R-706 shows excellent gloss retention and chalk resistance.

### Excellent Dispersibility

The alumina (Al<sub>2</sub>O<sub>3</sub>) surface treatment reduces the contact between TiO<sub>2</sub> particles, resulting in excellent dispersion of R-706 in solventborne systems. To further enhance dispersion, we apply an organic treatment during manufacture.

### Easy Wet-in

Novel precipitation of the silica and alumina surface treatments result in the low oil absorption properties of R-706 that are responsible for its excellent wet-in. Less power required for R-706 wet-in could result in productivity gains and capacity increases.

### Good Hiding

The low surface treatment levels, 3% amorphous silica and 2.5% alumina, result in a high TiO<sub>2</sub> content for R-706, contributing to good hiding. The mean particle size of R-706 approaches the optimum particle size for scattering efficiency.

### Blue Undertone

Small particle size TiO<sub>2</sub> grades scatter blue light more effectively than larger particle size grades and hence have a bluer undertone. The bluer undertone of R-706 imparts a brighter, cleaner tint.

### Safety Precautions

- Titanium dioxide is classified as a nuisance dust. Follow all local regulations and DuPont recommendations for exposure limits as described in the Material Safety Data Sheet (MSDS). If the recommended exposure limits of TiO<sub>2</sub> are to be exceeded, NIOSH-approved air-purifying respirators with particulate filters should be used.
- As a matter of good industrial hygiene, gloves and safety glasses with side shields or better eye protection should be worn when handling TiO<sub>2</sub>. For more details, refer to the MSDS.

### First Aid

- If large amounts of TiO<sub>2</sub> are inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- In case of eye contact, immediately flush with water for at least 15 min. Call a physician. In case of skin contact, the compound is not likely to be hazardous, but cleaning the skin after use is advised.

### Shipping Containers

DuPont™ Ti-Pure® R-706 is available in 50-lb and 25-kg paper bags and semi-bulk containers (1/2 and 1 metric ton). Truckload shipments of the dry product are available directly from DuPont. Less-than-truckload volumes are available through one of the authorized DuPont distributors.

Water slurries are available in some regions in truckload shipments (15 metric ton) and railcar (67 metric ton).

### Product Storage

The shelf life of DuPont™ Ti-Pure® TiO<sub>2</sub> is indefinite as long as the material is kept from direct contact with moisture.

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

[www.titanium.dupont.com](http://www.titanium.dupont.com)



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