

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 ₂ , 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 TiO₂ 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 TiO₂ particle by a continuous coating of silica (SiO₂) 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 (Al₂O₃) surface treatment reduces the contact between TiO₂ 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 TiO₂ 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 TiO₂ 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 TiO₂ 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 TiO₂. For more details, refer to the MSDS.

First Aid

- If large amounts of TiO₂ 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® TiO₂ 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



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