



Technical Data Sheets

R-223 Rutile

R-223 Rutile type Titanium Dioxide is an excellent general-purpose grade titanium dioxide produced by the sulfuric acid process. This product integrates the innovation studies on inorganic coating, organic treatment, salt treatment, calcinations control, hydrolysis and product application etc. and also adopts advanced control of color hue and particle size. It is subjected to inorganic and organic surface treatment with zirconium and alumina, which makes the product excellent application performance.

Particle size

The hydrolysis process well designed by Meide Group Inc. causes the product to be of small particle size, resulting in white tint, blue undertone and supreme hiding power.

Surface treatment

The optical performance can achieve the greatest effect by means of advanced inorganic and organic surface treatment with zirconium and aluminium. Zirconium compound has been utilized for surface treatment which enables the product to have better hiding power, higher luster and excellent weather resistance. The dispersibility of the product has been greatly improved when the surface of R-223 is coated with organic agents.

Particle size distribution

The particle size distribution of R-223 is more concentrated with adoption of strict hydrolysis calcinations process, causing the product to be of higher luster, better dispersibility, and excellent hiding power and color strength.

Standards used

R-223 complies with the following standards:

Type **R2**, ISO591

CAS NO. **13463-67-7**

EINECS NO.236-675-5

Color index NO.77891, white pigment

Applicable scope

Indoor and outdoor coatings, powder coatings and color master-batch, plastics systems etc.

Application characteristics

1. Blue undertone tint: the particle size is small and homogenous, which can scatter blue light more effectively than big particle size, therefore, the product has blue undertone tint and excellent whiteness.

2. High weather resistance: the product is of lattice perfection and adopts advanced inorganic and organic surface treatment with zirconium and aluminium; thereby higher weather resistance can be assured.

3. Excellent dispersibility: special inorganic and organic surface treatment lower coalescence between TiO₂ particles, which causes the product to show excellent dispersibility in the application systems.

4. Lower oil absorption: the low oil absorption makes Titanium Dioxide own good wettability and easily-dispersed in application systems, which is beneficial to cost.

Mass fraction of TiO ₂ (%)	94.3
Tint reducing power (Reynolds number)	1970
Rutile content	98.5
Mass fraction of volatiles at 105C (%)	0.3
pH valus of aqueous suspension	7.3
Oil absorption (g/100g)	20
Mass fraction of screenings (45 μm) %	0.01
Dispersibility (Hickmann number)	6.25
Electrical resistivity (Ωm)	263
Alumina, wt%, max (Al ₂ O ₃ %)	3
Silica, wt%, max (SiO ₂ %)	None
Zirconia, wt%, max (ZrO ₂ %)	0.50%
Median Particle Size*, μm	0.332
Color CIE L*	98.4
Color CIE b*	1.93

CR-501 Rutile

CR-501 is a multifunctional, universal titanium dioxide pigment produced by chloride process and surface wet treatment by inorganic metal oxides. It has excellent particle size distribution, good dispersability, and high whiteness, tinting strength and hiding power. Being equivalent to DuPont R-902, CR-501 is considered the best in industry, and is procured from reliable manufacturers in the market.

Surface treatment

The optical performance of CR-501 can achieve the greatest effect by means of advanced surface treatment with alumina and silica. The dispersibility of the product has been greatly improved when the surface of CR-501 is coated with organic agent.

Standards used

CR-501 complies with the following standards:
 Type **R2**, ISO591
 CAS NO. **13463-67-7**
 EINECS NO.236-675-5
 Color index NO.77891, white pigment 6

Properties/Product Name	CR-501
TiO ₂ , wt%, min.	93
Alumina	Yes
Amorphous Silica	Yes
Amorphous Zirconium	No
Color CIE L*	99.8
Median Particle Size*, μm	0.28
Oil Absorption	19.5
pH	8.6
Tinting Power	1920
Specific Gravity, g/cm ³	4.0
Solution water (%)	0.4
C 45 um Sieve Residue (%)	0.01

Applicable scope

Exterior/interior coatings, decorative paper, paints, ink, masterbatch, it is especially suitable for paper making and aqueous emulsion paints; Production of solvent and water based systems for industrial coatings and inks. PVC/ Plastic Industry

CR-510 Rutile

CR-510 is produced by chloride process and surface wet treated by inorganic metal oxides, and special organic chemicals. It is a general titanium dioxide pigment. CR-510 has excellent particle size distribution and durability, good dispersibility, high whiteness, tinting strength and hiding power. CR-510 is widely used in polyolefin, PVC, ABS resins, high gloss paints, and coatings for sheets, powder paints and ink industries.

Applications

Powder coatings, automotive coatings, Exterior industrial finishes, Ink, Masterbatch, and PVC

Properties

Excellent particle size distribution
 High durability
 Good dispersibility
 High whiteness
 High tinting strength
 Great hiding power

Properties/Product Name	CR-510
TiO ₂ , wt%, min.	94.5
Alumina	Yes
Amorphous Silica	Yes
Amorphous Zirconium	Yes
Color CIE L*	98.3
Median Particle Size*, μm	0.275
Oil Absorption	17.5
pH	7.5
Tinting Strength (Re)	1800
Specific Gravity, g/cm ³	4.1
Carbon Black Undertone (CBU)	14
Volatile at 105 °C	≤0.5

DTA-110 Micro-Particle/ Reagent Grade

DTA-110 is produced with advanced technology. This product has good pigment properties, excellent resistance, high level of whiteness, tint reducing powder and low oil absorption and it is easy to disperse. Without the extra chemical treatments on the surface of the particles, this product consists of the highest photocatalytic potential for engineering applications.

Standards used

DTA-110 complies with the following standards:
 ISO 591-1: A
 ASTM D476-00: I
 CAS NO. **1317-70-0**
 Color index NO.77891, white pigment

TiO ₂ Content , %	Min	99.0
Relative tint reducing power , %	Min	100
Oil Absorption, g/100g	Max	26
Volatile at 105 C, %	Max	0.5
Water Soluble matter,%	Max	0.5
Residue,(45µm)%	Max	0.05
Extraction	Min	20
Particle Size (nanometer)	Max	3.0 x 10 ²

Applicable scope

Laboratory Applications, Photocatalysis, Self-Cleaning Products, Paints, Plastic, Rubber, and PVC pipelines etc.

Handling

Avoid dust formation during handling. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. In case of insufficient ventilation, wear suitable respiratory equipment. Please see the Material Safety Data Sheets (MSDS) of this product for more safety information prior to use.

BA01-01C Enamel/ Ceramic Grade Titanium Dioxide

BA01-01C is an advanced Titanium Dioxide specifically engineered and designed for ceramic, glass, and glaze applications. It contains many reagents that improve the particle dispersibility as well as its functionality.

Applicable scope

Enamel, ceramic industry, electronic industry, electric appliances and welding unit etc.

Storage

Store in cool well-ventilated area, keep away from ignition source, heat and flame.

Packaging

25kg kraft paper bag 20 mt/800 bags in 20 ft

Technical Index	Content
TiO ₂ %	≥ 98.5
Fe ₂ O ₃ %	≤ 0.05
SO ₃ %	≤ 0.15
P %	≤ 0.3
SiO ₂ %	≤ 0.3
105 C Moisture	≤ 0.5
Residue on 325 Mesh % (45µm)	≤ 0.3

All information is based on data obtained from the manufacturer or recognized technical sources. The information is believed to be accurate. We make no representation or warranty, express, or implied, concerning the accuracy or sufficiency of the information. We are not liable for any damages resulting from the use of the information.

PS-223

Meide PS-223- has been designed especially for applications in the paper industry. Brightness adjusts its supreme or wet coating end uses. Table 1 shows the comparison between the technical paper slurry with rutile PS223.

Table 1. Properties Comparison

Property	(Ref) Rutile Paper Slurry TiO ₂	PS - 223 TiO ₂
Measuring the optical density	1.10	1.10
Refractive index	2.72	2.71
The median particle size (um) *	0.385	0.332
Support geometric deviation (GSD)	1.49	1.50
% Solids	69-71.5	71.5
Viscosity (Hercules High Shear viscometer), cP to 10,430s -1	16	16
Brookfield Viscosity, cP	168	168
pH	8.9	7.4
Unbrushed +325 mesh Grit, %	0.0010	0.0009
TAPPI brightness	98	97.5

* Light laser scattering particle size analyzer

** Geometric standard deviation (GSD) characterizes the width of a distribution log normal particle size such as TiO₂ PS223.

Table 2. Specifications:

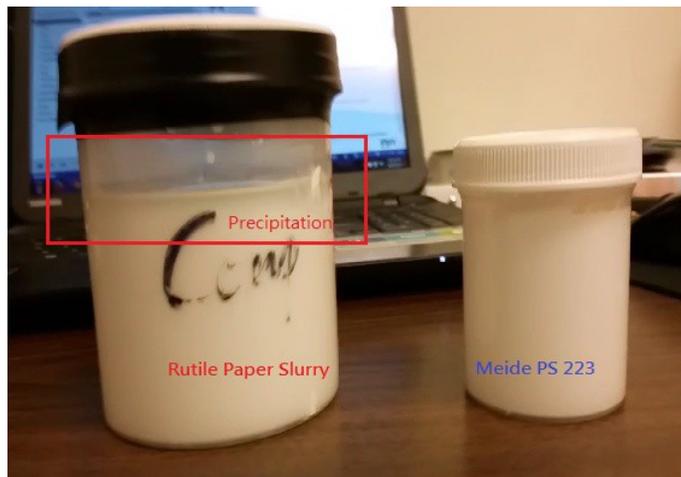
	Rutile Paper Slurry	PS-223
Solid content,% TiO ₂	69-72	71.5
pH	7-9	7.4
Viscosity, cP	150-190	168-200

Note: Viscosity change dramatically based on% TiO₂.

Figure 1. Comparison Visual

No precipitation was shown in PS-223. Whereas in Rutile Paper Slurry, precipitation was observed after 3 days of shelf time.

*In addition, the growth rate of bacteria in RPS was 15% higher than PS-223.



CR-506 Ultra-durable Chloride Processed TiO₂

CR-506 is a rutile Titanium Dioxide pigment manufactured by the chloride process. It is a multipurpose product, specially treated by silica, alumina and organic compound. It is mainly used in applications that require high chalking resistance, high gloss and color retentions. Besides the excellent durability, the product also has marvelous gloss, high hiding power and dispersibility. It is also comparable to R-960.

Features

- Maximum weather resistivity.
- Resist chalking; retain gloss, and good tint strength.
- Propose lower opacity strength for significant cost reduction in color toner.
- Grant maximum thermal stability during processing.

Applicable Scope

- Exterior PVC building products
- Roofing membrane
- Outdoor fiber
- Powder coatings

Specifications:

TiO₂ Content, %
 Surface treatment
 Classification
 Rutile content, %
 Color CIE L*
 Color CIE b*
 Specific Gravity, g/cm³
 Tinting strength, %
 pH
 Oil absorption, g/100g
 Median particle size, um
 Carbon black undertone (CBU)
 Acid Solubility

92.5
Silica, Alumina, Organic
ISO 591:R2; ASTM D-476-84: II(IV)
99.9
98.3
1.70
4.0
115
8.0
18.5
0.28
13.5
0.30

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