AN CHEMICAL CORPORATION

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ANCC Titanium Dioxide

List of Grades Worldwide

Titanium Dioxide

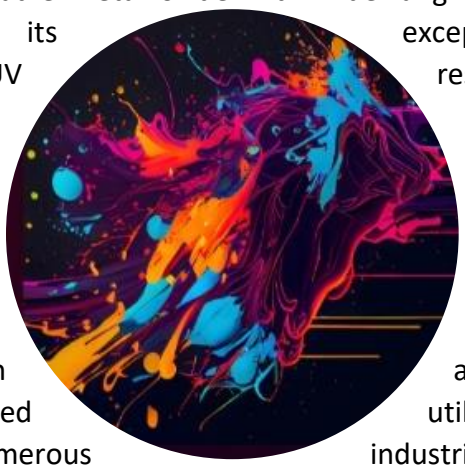
TRUST THE ANCC CHEMICALS SPECIAL QUALITY

Established in 2000 amidst the pulsating hub of the global chemical industry, AN Chemical Corporation Ltd. (ANCC) has been steadfast in its pursuit of excellence. Our mission extends beyond merely supplying chemicals; we aspire to be pioneers of innovation and champions of progress.

Through strategic partnerships with esteemed international institutes, manufacturers, engineering and research entities, as well as other key players in the chemical supply chain, ANCC has woven a dynamic network. This network serves as the backbone of our commitment to our customers, ensuring not only the highest standards of product quality but also the safeguarding of stakeholder interests on multifaceted levels: from humanitarian concerns to financial sustainability, social responsibility, health and well-being, happiness, and environmental stewardship. At ANCC, we don't just deliver chemicals; we deliver a promise of excellence and a commitment to a better tomorrow.

TITANIUM DIOXIDE
Rutile – Anatase - Brookite

TITANIUM DIOXIDE INDUSTRIAL APPLICATIONS



Titanium dioxide (TiO2) is a versatile metal oxide with wide-ranging applications across diverse industries. Renowned for its exceptional properties including opacity, brightness, and UV resistance, TiO2 is a cornerstone in industries such as paints and coatings, plastics, cosmetics, and food. In paints and coatings, it provides excellent coverage and durability, while in plastics, it enhances strength and UV protection. Furthermore, TiO2 is a common ingredient in sunscreens and cosmetics, offering effective UV blocking properties. In the food industry, it serves as a whitening and brightening agent in products such as candies, chewing gum, and dairy items. With its multifaceted utility, titanium dioxide continues to be indispensable in numerous industrial sectors worldwide. Titanium dioxide, also known as titanium (IV) oxide or titania, is the inorganic compound with the chemical formula TiO_2. When used as a pigment, it is called titanium white, Pigment White 6, or CI 77891. It is a white solid that is insoluble in water, although mineral forms can appear black.

TITANIUM DIOXIDE – INDUSTRIAL COATINGS & INK

Rutile TiO_2	R818	R838	R836	R868	R878	BA-01
Water-based Paint	●	●	●	●	●	●
Solvent-based Paint	●	●	●	●	●	●
Powder Coating	●	●	●	●	●	●
Automotive	●	●	●	●	●	●
Electrodeposition	●	●	●	●	●	●
Primer	●	●	●	●	●	●
Finishing Coat	●	●	●	●	●	●
Refinishing	●	●	●	●	●	●
Metallic Paint	●	●	●	●	●	●
Emulsion Paint	●	●	●	●	●	●
High Weatherability	●	●	●	●	●	●
High Gloss	●	●	●	●	●	●
Coil Coating	●	●	●	●	●	●
Wood Coating	●	●	●	●	●	●
Traffic Paint	●	●	●	●	●	●
Printing Ink	●	●	●	●	●	●

TITANIUM DIOXIDE – PLASTIC & PVC INDUSTRIES

Rutile TiO_2	R818	R838	R836	R868	R878	BA-01
PVC	●	●	●	●	●	●
Rigid Plastic	●	●	●	●	●	●
Flexible Plastic	●	●	●	●	●	●
Engineering Plastic	●	●	●	●	●	●
Thermoset Plastic	●	●	●	●	●	●
Masterbatch	●	●	●	●	●	●

Please contact ANCC experts for receiving products detail information in compatible with your process requirements.

TITANIUM DIOXIDE – COSMETIC INDUSTRIES

Rutile TiO_2	MPT-171	MPT-350	TTO-51(C)	TTO-55(C)	TTO-V-4	Tipaque® CR-50	Tipaque® PF-671
Bath / shower	●	●	●	●	●	●	●
Concealer	●	●	●	●	●	●	●
Eye contour products	●	●	●	●	●	●	●
Eye liner	●	●	●	●	●	●	●
Eye shadow	●	●	●	●	●	●	●
Foundation	●	●	●	●	●	●	●
Lip care products	●	●	●	●	●	●	●
Lip stick	●	●	●	●	●	●	●
Nail care products	●	●	●	●	●	●	●
Nail hardener	●	●	●	●	●	●	●
Nail sculpting	●	●	●	●	●	●	●
Nail varnish	●	●	●	●	●	●	●
Nail make-up	●	●	●	●	●	●	●
eye make-up	●	●	●	●	●	●	●
face make-up	●	●	●	●	●	●	●
make-up	●	●	●	●	●	●	●
skin cleansing	●	●	●	●	●	●	●
Soap	●	●	●	●	●	●	●

Please contact ANCC experts for receiving products detail information in compatible with your process requirements.

RUTILE TITANIUM DIOXIDE

RUTILE TiO_2 - R836	Property	Values
Inorganic Si, Al surface coating organic surface treating, good whiteness, good optical property and hiding power, good durability and dispersibility.	GRADE	R836
	TiO_2 (%)	Min 92
	Matter volatile at 105℃ (%)	0.8
	Hydrotrope (%)	Max 0.5
	Residue on sieve 45μm (%)	Max 0.05
	Color compares with standard	Not lower than
	Tinting strength compare with standard (%)	Min 108
	PH of suspension, aqueous solution retained	6.5-8.5
	Oil absorption g/100g	Max 21
	Resistivity of aqueous extract Ωm	Min 50
	Rutile crystal form conversion (%)	97.5
	Average particle diameter μm	0.22-0.28

RUTILE TiO_2 - R838	Property	Values
Inorganic Si, Al surface coating, organic surface treating, has optical properties of partial blue phase, good whiteness, good optical properties and hiding power, good durability and dispersibility etc.	GRADE	R838
	TiO_2 (%)	Min 92
	Matter volatile at 105℃ (%)	0.8
	Hydrotrope (%)	Max 0.5
	Residue on sieve 45μm (%)	Max 0.05
	Color compares with standard	Not lower than
	Tinting strength compare with standard (%)	Min 108
	PH of suspension, aqueous solution retained	6.5-8.5
	Oil absorption g/100g	Max 21
	Resistivity of aqueous extract Ωm	Min 50
	Rutile crystal form conversion (%)	97.5
	Average particle diameter μm	0.22-0.28

RUTILE TITANIUM DIOXIDE

RUTILE TiO_2 - R868	Property	Values
Inorganic Zr, Al surface coating, organic surface treating, good whiteness, high fluidity and glossiness, good tinting strength, strong hiding power, easy to disperse etc.	GRADE	R868
	TiO_2 (%)	Min 93
	Matter volatile at 105℃ (%)	0.8
	Hydrotrope (%)	Max 0.5
	Residue on sieve 45μm (%)	Max 0.05
	Color compares with standard	Not lower than
	Tinting strength compare with standard (%)	Min 112
	PH of suspension, aqueous solution retained	7.0-8.8
	Oil absorption g/100g	Max 19
	Resistivity of aqueous extract Ωm	Min 50
	Rutile crystal form conversion (%)	97.5
	Average particle diameter μm	0.20-0.26
	ZrO_2 (%)	0.3—0.6
	Al_2O_3 (%)	3.2—4.0

RUTILE TiO_2 - R878	Property	Values
Inorganic Al surface coating, organic surface treating, good glossiness, good tinting strength, strong hiding power, resist to atomize, and easy to disperse in plastic and rubber etc.	GRADE	R878
	TiO_2 (%)	Min 96
	Matter volatile at 105℃ (%)	0.8
	Hydrotrope (%)	Max 0.5
	Residue on sieve 45μm (%)	Max 0.05
	Color compares with standard	Not lower than
	Tinting strength compare with standard (%)	Min 115
	PH of suspension, aqueous solution retained	6.5-8.5
	Oil absorption g/100g	Max 18
	Resistivity of aqueous extract Ωm	Min 50
	Rutile crystal form conversion (%)	97.5
	Average particle diameter μm	0.20-0.26

ANATASE TITANIUM DIOXIDE

ANATASE BA01-01	Property	Values
Excellent whiteness pigment, good whiteness, high tinting strength and strong hiding power	GRADE	BA01—01
	TiO_2 (%)	Min 98
	Matter volatile at 105℃ (%)	0.5
	Hydrotrope (%)	Max 0.5
	Residue on sieve 45μm (%)	Max 0.1
	Color compares with standard	Not lower than
	Tinting strength compare with standard (%)	Min 100
	PH of suspension, aqueous solution retained	6.5-8.0
	Oil absorption g/100g	Max 26
	Resistivity of aqueous extract Ωm	Min 20
	Whiteness (%)	95.0
	Average particle diameter μm	0.20-0.26

CI 77891 TITANIUM DIOXIDE

Titanium Dioxide CI 77891	Property	Values
CI 77891 (Titanium Dioxide) is a white pigment that is used in cosmetics and personal care products to obtain a rich opaque color in the formulations. It can further be mixed with other colorants to obtain different shades and hues in a product. Apart from this, CI 77891 is also beneficial for blocking potentially harmful UV rays and is thus widely used in sunscreens. The chemical formula of titanium dioxide is TiO2. A similar ingredient to CI 77891 is zinc oxide, which is also a white colorant and has slightly better performance in protection from sun rays than titanium dioxide.	GRADE	CI 77891 titanium dioxide
	Chem/IUPAC Name	Titanium dioxide; Titanium (IV) oxide
	CAS Number	13463-67-7
	EINECS/ELINCS No.	236-675-5
	COSING REF No.	32837
	CI 77891 Alternatives	ZINC OXIDE, CALCIUM, CARBONATE
	Boiling Point	2972°C
	Melting Point	1843°C
	pH	2.95
	Solubility	Insoluble in water

TITANIUM DIOXIDE COSMETIC GRADES

Titanium Dioxide (Nano). MPT-171 is a rutile, ultrafine titanium dioxide that can be used as a UV-B filter. Among mineral-based UV filters, titanium dioxide is known for its high level of safety and sustainability. It causes minimal irritation to the skin, making it the ideal choice for baby sunscreens and products for those with sensitive skin. Its range of wavelength absorption is between 290 and 320 nm. MPT-171 has the advantage of being low in heavy metals. In addition, it is photo-stable, hydrophobic, has low cohesiveness and can easily be dispersed in the oil phase using a homogenizing mixer. It has particularly high transmittance even in the visible region, making it ideal for use in sunscreens that require a transparent finish.

Titanium Dioxide (Nano). TTO-V-4 is a rutile, ultrafine titanium dioxide that can be used as a UV-B filter. Among mineral-based UV filters, titanium dioxide is known for its high level of safety and sustainability. It causes minimal irritation to the skin, making it the ideal choice for baby sunscreens and products for those with sensitive skin. Its range of wavelength absorption is between 290 and 320 nm. TTO-V-4 has the advantage of being low in heavy metals. It shows low cohesiveness and can easily be dispersed in the oil phase using a homogenizing mixer. It is photo-stable, shows hydrophobicity and offers sun protection. It exhibits particularly high transmittance even in the visible region, making it suitable for use in sunscreens that require a transparent finish. It is recommended for sun care, skincare and color cosmetics.

MPT-350 is a titanium dioxide pigment & texture enhancer. It has flake shape and larger size than regular titanium dioxide which makes it smoother. It provides baby skin texture, natural coverage, whiteness, silky luster & finish. MPT-350 is recommended for color cosmetics.

Titanium Dioxide (Nano). TTO-51(C) is a rutile, ultrafine titanium dioxide that can be used as a UV-B filter. Among mineral-based UV filters, titanium dioxide is known for its high level of safety and sustainability. Its range of wavelength absorption is between 290 and 320 nm. It causes minimal irritation to the skin, making it the ideal choice for baby sunscreens and products for those with sensitive skin. It has low photoactivity and low concentrations of heavy metals. It is photostable, shows hydrophobicity and offers protection from sun. TTO-51(C) shows high transmittance in the visible region, which is suitable for use in sun care products that require a transparent finish. It is recommended for skin care and color cosmetics.

Titanium Dioxide (Nano). TTO-55(C) is a rutile, ultrafine titanium dioxide that can be used as a UV-A & UV-B filter. Among mineral-based UV filters, titanium dioxide is known for its high level of safety and sustainability. It causes minimal irritation to the skin, making it the ideal choice for baby sunscreens and products for those with sensitive skin. Its range of wavelength absorption is between 290 and 340 nm. It has low photoactivity and low concentrations of heavy metals. It is photo-stable, shows hydrophobicity and offers sun protection. Compared to other grades, TTO-55(C) can shield against even longer wavelengths (UV-A), but has low transmittance in the visible region. Consequently, it is recommended for use in base makeup products that do not require high transparency. Before blending, it is recommended to disperse this product once in, for example, a highly polar ester oil. It is used in skin care and color cosmetics.

Tipaque® CR-50 by Nagase is a rutile-type, pigmentary titanium dioxide. It is the most commonly used whitening pigment in cosmetics around the world. Tipaque® CR-50 has low heavy metal content due to production using the chloride method. It has excellent photo-stability and shows high degree of whitening that provides outstanding coverage. It is recommended for skin- & oral care and color cosmetics.

Tipaque® PF-671 is a rutile-type titanium dioxide whitening pigment. It is produced using chloride method due to this it contains low heavy metal content. It provides outstanding coverage and has excellent photo-stability. It is recommended for skincare and color cosmetic products. At a particle size of 210 nm, Tipaque® PF-671 is comparatively small for a pigmentary-grade titanium dioxide, which creates natural whitening.

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ANCC

ANCC was founded in 2000 in the heart of Chemicals world. ANCC, a Chemicals supplier and strategic partner to all Process & Non-Process worldwide industries, is the leading supplier of cutting-edge science and technologies. ANCC is an important unit of the customer's organization, to be ensured products quality are not only in line with worldwide standards but also stockholder's interests would be assuring in all of financially, socially, healthy, happiness, and environmental aspects.

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