



**AN Chemical Corporation**  
**COSMETIC GRADE 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**

Titanium dioxide ( $\text{TiO}_2$ ) is a versatile metal oxide with wide-ranging applications across diverse industries. Renowned for its exceptional properties including opacity, brightness, and UV resistance,  $\text{TiO}_2$  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. With the chemical formula  $\text{TiO}_2$ , titanium dioxide, also referred to as titanium (IV) oxide or titania, is an inorganic substance. It is also known as titanium white, Pigment White 6 (PW6), or CI 77891 when used as a pigment. Although mineral forms can appear black, it is a solid that is insoluble in water and is white in color. It functions as a physical sunscreen that reflects ultraviolet radiation from the sun as opposed to chemical sunscreens that absorb it. It has a molecular weight of 79.866.



 ISHIHARA SANGYO KAISHA, LTD. <span style="float: right;">www.iskweb.co.jp</span>	
Large Particle size - Calcination process	TTO-80 (A) ; MPT-142 ; MPT-140 ; MPT-141
Medium-sized Particle - Calcination process	TTO-55 series
Small Particle size - Calcination process	TTO-51 series
Small Particle size - Wet process	TTO-S series ; MPT-136 ; MPT-186 ; MPT-187
Very small Particle size - Wet process	TTO-V series

 SMART SCIENCE TO IMPROVE LIVES™ <span style="float: right;">www.crodabeauty.com</span>	
Ideal for skin care, color cosmetics and sun care.	SOLAVEIL™ CTP1
The large particle size offers a higher level of UVA protection	SOLAVEIL™ XT-300
Combining an exceptional level of UVA protection with high UVB efficacy	SOLAVEIL™ XT-40W
Ideal for natural sunscreen formulations.	SOLAVEIL™ HTP1
IT-100 has a large particle size yet minimal whitening on skin	INFRAVEIL™ IT-100
Protection against multiple forms of environmental aggressors	OPTISOL™ OTP-1
Solaveil AT-300 creates a physical shield on the skin and offers broad spectrum UV protection	SOLAVEIL™ AT-300
It is ideal for skin care, color cosmetics and sun care.	SOLAVEIL™ CT-100
Ideal for combining with organic sunscreens.	SOLAVEIL™ CT-12W
ideal for skin care, color cosmetics and sun care.	SOLAVEIL™ CT-200
Discover a sensational skin feel with Solaveil ST-100.	SOLAVEIL™ ST-100
Discover a sensational skin feel with the Solaveil Sensation range of titanium dioxide ingredients.	SOLAVEIL™ STP1 MBAL
The large particle size offers a higher level of UVA protection than traditional grades of TiO <sub>2</sub> .	SOLAVEIL™ XT-100
The large particle size offers a higher level of UVA protection than traditional grades of TiO <sub>2</sub> .	SOLAVEIL™ XTP1
Ideal for products for babies, children and sensitive skin.	SOLAVEIL™ XTP2
Inorganic UV filter.	TIOVEIL™ 50 FCM


[www.tayca.co.jp](http://www.tayca.co.jp)

Titanium dioxide	Rutile & Anatase Titanium Dioxide
Micro titanium dioxide	Excellent dispersibility and outdoor weather resistance; strong flip-flop sensation
Photocatalytic titanium dioxide	Photocatalytic titanium dioxide uses ultraviolet rays from natural and artificial light, together with water and oxygen
Infrared-refracting titanium dioxide	This material can suppress near-infrared light from being absorbed internally


[www.crodabeauty.com](http://www.crodabeauty.com)

Ideal for skin care, color cosmetics and sun care.	SOLAVEIL™ CTP1
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ideal for skin care, color cosmetics and sun care.	SOLAVEIL™ CT-200
Discover a sensational skin feel with Solaveil ST-100.	SOLAVEIL™ ST-100
Discover a sensational skin feel with the Solaveil Sensation range of titanium dioxide ingredients.	SOLAVEIL™ STP1 MBAL
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Ideal for products for babies, children and sensitive skin.	SOLAVEIL™ XTP2
Inorganic UV filter.	TIOVEIL™ 50 FCM

**TRONOX**  [www.tronox.co](http://www.tronox.co)


Ultrafine and Specialty Titanium Dioxide  
CristalACTiV™

DT-20	DT-51	DT-51D	DT-52	DT-55	DT-58	DT-S10	DT-W5	G2	G5
MC-10	MC-500	MC-508	PC-105	PC-500	PC-S7	PC-S12	S5-300A	S5-300B	AT-1

TiONA®AT-1 GG TiONA® ATP-01

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## CI 77891 TITANIUM DIOXIDE

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 TiO<sub>2</sub>. 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.

Product	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

### Application

The functions of CI 77891 titanium dioxide are two-fold: it is a whitening agent and also acts as a barrier against harmful radiations of the sun. It is used in a wide range of products like sunscreens, cosmetic powders, toothpaste, soaps, etc. CI 77891 in cosmetics is generally used as a pigment to result in an opaque white powder. This ingredient is also mixed with other colorants, especially in products like lipsticks, to make different hues and shades of a color.

Property	Values
Boiling Point	2972°C
Melting Point	1843°C
pH	2.95
Solubility	Insoluble in water

### Origin

CI 77891 is extracted from naturally occurring minerals like rutile, ilmenite, and anatase. These minerals are all abundant in nature, making titanium dioxide a widely used pigment - it makes up to two-thirds of all the pigments used worldwide. Further, titanium dioxide is produced at nano grade or pigment grade, pigment grade being much larger in size. Nano grade CI 77891 titanium dioxide is generally added to products like sunscreens to offer protection against harmful UV rays. Whereas, the pigment grade is used as a colorant to whiten formulations.

### Safety

CI 77891 titanium dioxide is vegan, halal, non-toxic, and overall safe to be used in cosmetics. Its particles are large enough to not penetrate healthy skin and pose any dangers. However, CI 77891 is dangerous if inhaled and has shown an increased risk of lung cancer in animals. Therefore, this ingredient should be avoided in spray-on products.

### MPT-171

Titanium Dioxide (Nano). MPT-171 by Nagase 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.

### MPT-350

MPT-350 by Nagase 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.

### TTO-51(C)

Titanium Dioxide (Nano). TTO-51(C) by Nagase 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.





## TTO-55(C)

Titanium Dioxide (Nano). TTO-55(C) by Nagase 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.

NAGASE  
TITANIUM DIOXIDE



### **SOLAVEIL™ CT-100**

C12-15 Alkyl Benzoate (and) Titanium Dioxide (and) Polyhydroxystearic Acid (and) Aluminum Stearate (and) Alumina. Solaveil™ CT-100 by Croda acts as a sunscreen agent for UVB protection. This oil-based titanium dioxide dispersion provides high SPF efficacy, elegant skin feel and true transparency to the skin. It is an inorganic UV filter that offers long-lasting benefits. It has tightly controlled particle size distribution that eliminates whitening. It shows consistent performance due to optimized dispersion technology. Solaveil™ CT-100 is used in formulating face/neck skin care, sun protection and face color products. Also, used in bath, shower & soaps, body-, eye contour- and lip care formulas.

### **SOLAVEIL™ CT-200**

Isohexadecane, Aluminium Stearate, Titanium Dioxide, Triethylhexanoin, Polyhydroxystearic Acid and Alumina. Solaveil™ CT-200 by Croda acts as a UV filter. Used in color cosmetics, sun care & daily wear formulations particularly for sensitive skin. Offers effective and safe UV protection combined with ease of use and optimized aesthetic properties. Solaveil™ CT-200 is an oil-based dispersion of titanium dioxide, providing high SPF efficacy with true transparency on the skin and elegant skin feel

### **SOLAVEIL™ CTP-1**

Titanium dioxide, aluminium stearate and alumina. Solaveil™ CTP-1 by Croda acts as a sunscreen agent. Provides long-lasting UVB protection with true transparency on the skin following application. It does not degrade/oxidize. Solaveil™ CTP-1 is used in sun care and daily wear skin care formulations.

### **SOLAVEIL™ CTP-7**

Titanium dioxide, Aluminium Hydroxide, Hydrated Silica and Hydrogen Dimethicone. Solaveil™ CTP-7 by Croda acts as a UV filter. It is a silicone coated titanium dioxide powder that offers UVB protection and transparency on the skin. Solaveil™ CTP-7 does not degrade or oxidize. Used in silicone-based systems such as face/ neck skin care, body care, face color, sun care and color cosmetics.



**SOLAVEIL™ STP-1**

Titanium dioxide, silica, stearic acid and aminopropyl triethoxysilane. Solaveil™ STP-1 by Croda acts as a sunscreen agent. It is a titanium dioxide-based powder offering UVB protection, transparency on the skin and a sensational skin feel arising from its innovative silane coating. It does not degrade/oxidize. Solaveil™ STP-1 is used in premium sun care and daily wear skin care formulations.

**SOLAVEIL™ XTP-1**

Titanium Dioxide (and) Stearic Acid (and) Alumina. Solaveil™ XTP-1 by Croda acts as a UV- and blue light filter. It combines exceptional UVA protection with high UVB efficacy. It is an EO/PO-, preservative-, EDTA- and BHT/BHA free, broad-spectrum filter. It also provides blue light (or high energy visible/ HEV) protection. Solaveil™ XTP-1 is an ideal active ingredient for beach sun care formulations, in particular products for babies, children and sensitive skin, or color cosmetic applications.

**INFRAVEIL™ IT-100**

Titanium Dioxide (and) C12-15 Alkyl Benzoate (and) Polyhydroxy stearic Acid (and) Aluminum Hydroxide (and) Zinc Oxide (and) Isostearic Acid. Infraveil™ IT-100 by Croda acts as an anti-aging and sunscreen agent. It is a physical shield to Infrared-A (IRA) rays, delivering instant skin protection from IR-aging. Despite the large particle size, its patented titanium dioxide dispersion technology ensures minimal whitening on skin. Infraveil™ IT-100 is suitable for skin care and sunscreen applications as well as color cosmetics.



**Optisol™**

Titanium Dioxide. Optisol™ by Croda offers broad spectrum UVA and UVB protection. It provides benefits such as minimal free radical generation, effective physical free radical scavenger...

**Optisol™ TD-50**

Titanium Dioxide. Optisol™ TD-50 by Croda offers delivery of broad spectrum UVA and UVB protection. It provides benefits such as minimal free radical generation, effective physical free radical...

**Tioveil™ 50 OP**

Alumina (and) Aluminum Stearate (and) Ethylhexyl Palmitate (and) Polyhydroxystearic Acid (and) Titanium Dioxide. Tioveil™ 50 OP by Croda is an inorganic UV filter. This ingredient provides high SPF...

**Tioveil™ FIN**

Alumina (and) C12-15 Alkyl Benzoate (and) Polyhydroxystearic Acid (and) Silica (and) Titanium Dioxide. Tioveil™ FIN by Croda is an inorganic UV absorber. It provides high SPF efficacy and broad...

**Tioveil™ OP**

Alumina (and) Ethylhexyl Palmitate (and) Polyhydroxystearic Acid (and) Silica (and) Titanium Dioxide. Tioveil™ OP by Croda is an inorganic UV absorber. It imparts high SPF efficacy and broad...

**Tioveil™ 50 FCM**

Titanium dioxide (and) cyclomethicone (and) C12-15 alkyl benzoate (and) polyhydroxystearic acid (and) aluminium stearate (and) alumina. Acts as inorganic UV filter. Provides high SPF efficacy and is...

**Optisol™ OTP-1**

Titanium Dioxide (and) Manganese Dioxide. Optisol™ OTP1 by Croda acts as a UV filter and anti-aging agent. It provides protection from environmental pollutants. Optisol™ OTP1 finds application in...

**Tioveil™ 50 IPM**

Alumina (and) Aluminum Stearate (and) Isopropyl Myristate (and) Polyhydroxystearic Acid (and) Titanium Dioxide. Tioveil™ 50 IPM by Croda is an inorganic UV absorber. It provides high SPF efficacy...

**Tioveil™ 50 TG**

Alumina (and) Aluminum Stearate (and) Caprylic/Capric Triglyceride (and) Polyhydroxystearic Acid (and) Titanium Dioxide. Tioveil™ 50 TG by Croda is an inorganic UV filter. It provides high SPF...

**Tioveil™ IPM**

Alumina (and) Isopropyl Myristate (and) Polyhydroxystearic Acid (and) Silica (and) Titanium Dioxide. Tioveil™ IPM by Croda is an inorganic UV filter. It provides high SPF efficacy and broad spectrum...

**Tioveil™ TG**

Alumina (and) Caprylic/Capric Triglyceride (and) Polyhydroxystearic Acid (and) Silica (and) Titanium Dioxide. Tioveil™ TG by Croda is an inorganic UV absorber. It imparts high SPF efficacy and broad...

**Tioveil™ 50 FIN**

C12-15 alkyl benzoate (and) titanium dioxide (and) polyhydroxystearic acid (and) aluminium stearate (and) alumina. Acts as an inorganic UV filter. Provides high SPF efficacy and is less whitening on...