



## PRETIOX UVS30

PRETIOX UVS30 products are designed to be excellent in their UV absorption properties combined with low visible light scattering. They are made according to Regulation (EC) No 1223/2009 and OPINION ON Titanium Dioxide (nano form) SCCS Opinion 1516/13.

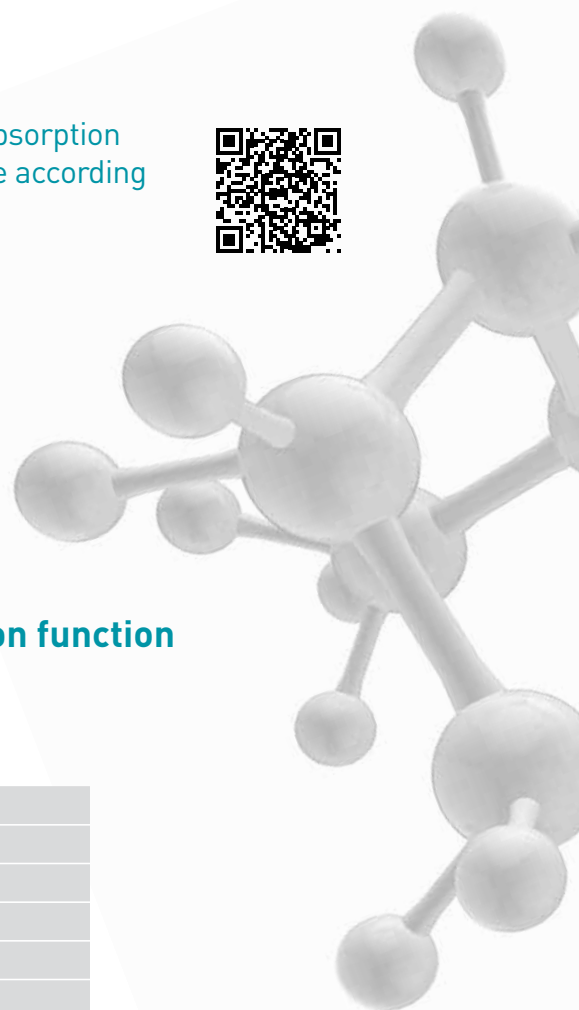
Rutile structure gives broad protection for UV radiation below 360 nm. When properly dispersed it results in the achievement of SPF values above 40. Their surface treatment provides them with greater stability, negligible photoactivity and OH radical formation. Therefore suspensions have excellent chemical stability without signs of yellowing.

### APPLICATION

- Sun protection creams and lotions with high SPF
- Lipsticks and make-ups with additional sun protection function

### IDENTIFICATION

Chemical name	Titanium dioxide
Chemical formula	TiO <sub>2</sub>
Molecular weight	79.88
Structure	Rutile
CAS No.	13463-67-7
EINECS No.	236-675-5



## Characteristics and typical properties

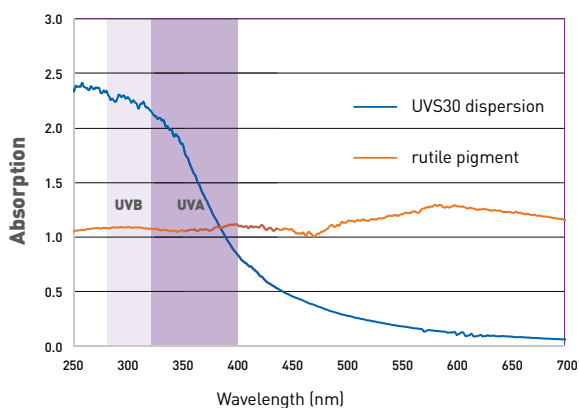
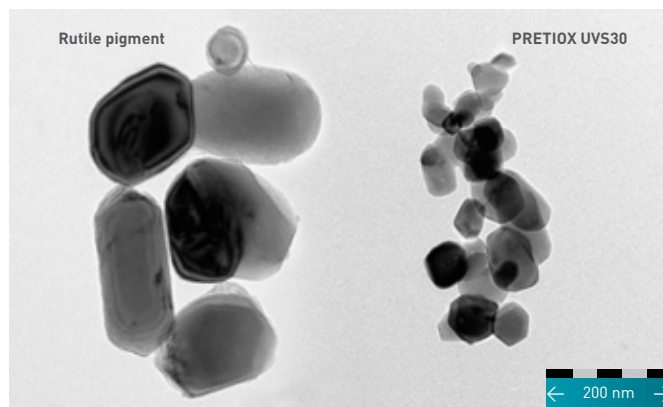
Product name	PRETIOX UVS30
Appearance	Solid powder
INCI name	Titanium dioxide, Silica, Alumina
Solid phase content	≥ 99 %
TiO <sub>2</sub> content	≥ 88 %
Inorganic coating	Al,Si
Organic treatment	None
Specific gravity	3.9
Mean crystal size	40 nm
Arsenic (As) (HCl soluble)	≤ 1 µg per g
Mercury (Hg) (HCl soluble)	≤ 1 µg per g
Lead (Pb) (HCl soluble)	≤ 10 µg per g
Antimony (Sb) (HCl soluble)	≤ 2 µg per g
Specific surface area	40-60 m <sup>2</sup> /g
Pathogens	Not detected
Photocatalytic activity	< 10%

Product name PRETIOX	Appearance	Liquid base (INCI name)	Solid phase content	Viscosity	Mean particle size
UVS30IM	White suspension	Isopropyl myristate Polyhydroxystearic acid	48 - 50 %	0.3 Pa.s	120 nm
UVS30AB		C12-C15 Alkyl benzoate Polyhydroxystearic acid		0.6 Pa.s	
UVS30BD		Butylene glycol dicaprylate/dicaprate Polyhydroxystearic acid		0.6 Pa.s	
UVS30ES		Ethylhexyl stearate Polyhydroxystearic acid		0.3 Pa.s	
UVS30HP		Ethylhexyl palmitate Polyhydroxystearic acid		0.4 Pa.s	
UVS30CT		Caprylic/Capric triglyceride Polyhydroxystearic acid		0.5 Pa.s	
UVS30SC		Simmondsia Chinensis Seed Oil Polyhydroxystearic acid		0.6 Pa.s	
UVS30W		Water Sodium hexametaphosphate 2-Fenoxy-ethan-1-ol, 3-(2-ethylhexyloxy)propane-1,2-diol		0.3 Pa.s	

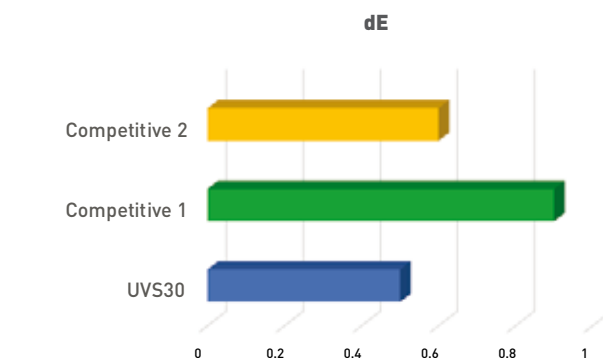
## PRETIOX UVS30 types bring security and performance to your products



TiO<sub>2</sub> is known to produce OH radicals but if properly surface treated the photoactivity is greatly reduced. Our products are not phototoxic (in vitro phototoxicity test on fibroblasts OECD TG 432 In Vitro 3T3 NRU). Although particles are much smaller than pigmentary they do not penetrate through skin (in vitro skin absorption method OECD TG 428).



Water suspension of UVS30 (0.5%)  
Ultrasonic dispersion  
Optical pathlength of the cuvette: 0.1 mm  
Measurement: StellarNet Optic Spectrometer EPP2000 and ISA2000



Photocatalytic activity 5% UVS30 formulation in C12-C15 alkyl benzoate irradiated in a Suntest CPS+ solar simulator for 30 minutes at 300 W/m<sup>2</sup>.  
Sample measured before and after using the Spectrophotometer UltraScan PRO (HunterLab).  
See Egerton et al. (2007) and SCCS Opinion on Titanium Dioxide, nano form, 1516/13, for more details.

Particles are designed to be rounded without sharp edges and therefore suspensions have lower viscosity even with increased concentration. Particle size is optimised for excellent UV absorption together with low visible light scattering. This gives pleasant visual appearance when applied on skin.