



APPLICATIONS

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

TITANIUM DIOXIDE 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. UVS30 has met the FDA (NDC Package Code: 72681-583-20) and the HALAL requirements (Halal-ID: C71837).

Identification

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

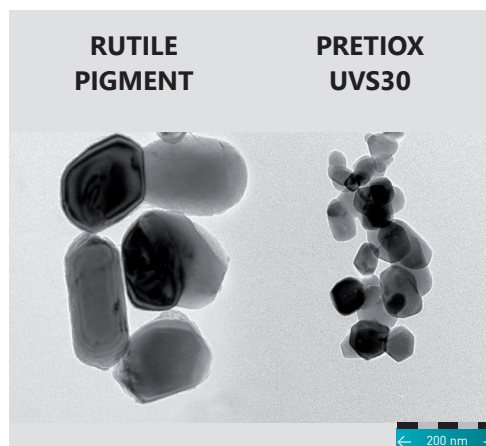
Rutile structure gives broad protection for UV radiation below 360 nm. When properly dispersed it results in the achievement of SPF values above 40. Surface treatment provides them with greater stability, negligible photoactivity and OH radical formation. Therefore suspensions and emulsions have excellent chemical stability without signs of degradation. It also protects organic UV absorbers which results in prolonged UV protection.



PRETIOX UVS30 types bring security and performance to your products

TiO₂ 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). UVS30 particles are much smaller than pigmentary they do not penetrate through skin (in vitro skin absorption method OECD TG 428).



Characteristics and typical properties

Product name PRETIOX UVS30

Main characteristics	Amphiphilic, semitransparent powder
INCI names	Titanium dioxide (nano), Silica, Alumina
Loss on ignition at 800 °C	< 10 %
TiO ₂ content (related to loss on ignition)	≥ 79 %
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 ² /g
Pathogens	Not detected
Photocatalytic activity	< 10%

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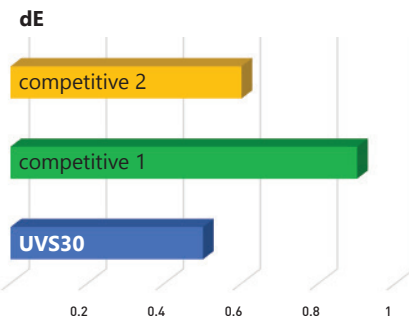


design: COLOUR FUSION | photo: INGIMAGE, PRECHEZA | 2019

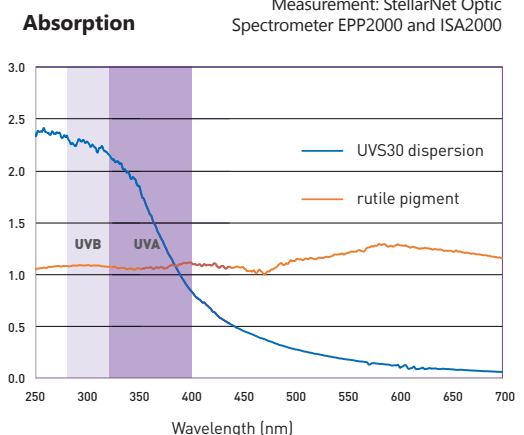
Product name	Appearance	Liquid base (INCI name)	Solid phase content	Viscosity	Mean particle size
UVS30IM	White suspension	Isopropyl myristate Polyhydroxystearic acid	53 - 55 %	0.3 Pa.s	120 nm
UVS30AB		C12-C15 Alkyl benzoate Polyhydroxystearic acid		0.6 Pa.s	
UVS30BD		Butylene glycol dicaprylate/dicaprate 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	48 - 50 %	0.3 Pa.s	

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.

Photocatalytic activity 5 % UVS30 formulation in C12-C15 alkyl benzoate irradiated in a Suntest CPS+ solar simulator for 30 minutes at 300 W/m². 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.



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



This leaflet is a general guide to the properties and fields of potential application of PRETIOX UVS30. Information on application is given in good faith and does not constitute any guarantee. For additional information see Product Specification or contact Technical Service at PRECHEZA company. Material Safety Data Sheet is available on www.precheza.cz. Samples are available on request. We recommend trial application tests.