

# Zano<sup>®</sup> 10, Zano<sup>®</sup> 20 & Zano<sup>®</sup> M

**Tailored products for UVA, UVB and transparency**

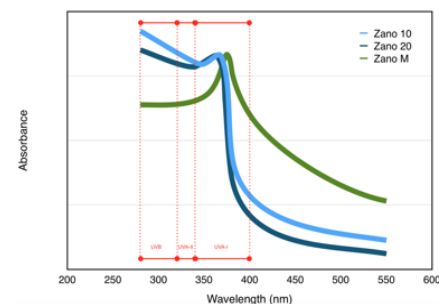
**Natural and photostable**

**Non-penetrating and safe**

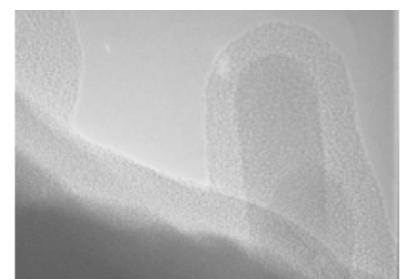
## Tailored products for UVA, UVB and transparency

The Zano<sup>®</sup> portfolio consists of three different grades of zinc oxide powders that each have been designed to exhibit distinct tailored performance in UVB, UVA and transparency. As such, there is a Zano<sup>®</sup> grade that will cover the specific performance needs in designing sunscreen performance. Each Zano<sup>®</sup> product is available in uncoated pure form and a triethoxycaprylyl silane surface treated version.

- **Zano<sup>®</sup> 10 & Zano<sup>®</sup> 10 Plus**  
Offering balanced protection in UVB, UVA and transparency
- **Zano<sup>®</sup> 20 & Zano<sup>®</sup> 20 Plus**  
Offering the highest levels of transparency
- **Zano<sup>®</sup> M & Zano<sup>®</sup> M Plus**  
Offering the highest levels of UVA protection
- **Xperse<sup>®</sup>**  
Various dispersions of Zano<sup>®</sup> and Zano<sup>®</sup> Plus powders



UV/vis absorbance profile of Zano<sup>®</sup> 10, 20 & M



Uniform surface treatment of Zano<sup>®</sup> 10 Plus

## Non-penetrating and safe

Zano<sup>®</sup> and Zano<sup>®</sup> Plus are safe UV filters, cGMP compliant and considered GRASE by the FDA in the 2019 proposed sunscreen monograph. Zano<sup>®</sup> are safe filters that do not penetrate the skin, which was reconfirmed in 2018 by studies by A. Holmes *et al.*<sup>1</sup> The same study also showed that no cellular toxicity was caused by repeated application of ultrafine zinc oxides on volunteers.”

Zano<sup>®</sup> filters are very mild on the skin and have been tested to cause no irritation and sensitization and are non photo-allergenic. Zano<sup>®</sup> combines all other skin benefits of zinc oxide, such as anti-inflammatory, anti-microbial and skin healing properties.

## Natural and photostable

As a mineral product abundantly present on the globe, zinc oxide is considered as a natural UV filter. All uncoated Zano<sup>®</sup> are Cosmos and Ecocert certified. Zano<sup>®</sup> products are photostable without the use of stabilizers and do not lose their performance upon sunlight radiation.

<sup>1</sup>“Support for the Safe Use of Zinc Oxide Nanoparticle Sunscreens: Lack of Skin Penetration or Cellular Toxicity after Repeated Application in Volunteers”, A. Holmes et al, Journal of Investigative Dermatology, 2018.

## Designing performance of Zano®

When used as single UV filter, the Zano® (Plus) products will each provide specific SPF, UVA and transparency levels that will all comply to international UVA regulations and broad-spectrum claims.

	SPF 1% adds	UVA-PF 1% adds	UVA-PF/ SPF	Critical wavelength	Transpa- rency
Zano® 10 & Zano® 10 Plus	~1.6 units	~0.75 units	~0.5	373 nm	Very good
Zano® 20 & Zano® 20 Plus	~1.5 units	~0.6 units	~0.4	371 nm	Excellent
Zano® M & Zano® M Plus	~1.5 units	~1.5 units	~1.0	385 nm	Good

When used as a single UV filter, SPF values of 30+ are easy to achieve and when designing SPF 50+ products, Zano® can be combined with different boosters or other UV filters.

### 0/W emulsion -20% Zano Plus as single UV Absorber

	Zano® 10 Plus	Zano® 20 Plus	Zano® M Plus
In-vivo SPF	33.2	39.5	31.3
In-vitro UVA-PF (ISO-24443)	14.8	13.8	30.5
PA rating	PA+++	PA+++	PA++++
Critical wavelength	373 nm	370 nm	385 nm

## Zano® and blue light

The different Zano® grades offer different levels of blue light protection. This protection is expressed as percentage of blocking in the blue light region, measured from UV-VIS spectra obtained using an integrated sphere.

A sunscreen stick containing 20% Zano® M Plus reaches a blue light protection rating of 'High' (Methodology and test performed at Helioscience, Marseille, France).

Sunscreen	Blue light Protection Level (380-500 nm)	Protection Level	Critical Wavelength (nm)
SPF 30 sunscreen stick 20% Zano® M	54%	High	377 nm
SPF 30 sunscreen stick 20% Zano® 10	41%	Good	373 nm

0-10 : No protection	10-25: moderate protection	25-50: good protection
50-75: high protection	>75: very high protection	

## Product overview

### Powders:

Zano® 10: uncoated zinc oxide **VV**

Zano® 10 Plus: coated with triethoxycaprylyl silane

Zano® 20: uncoated zinc oxide **VV**

Zano® 20 Plus: coated with triethoxycaprylyl silane

Zano® M: uncoated larger zinc oxide **VV**

Zano® M Plus: coated with triethoxycaprylyl silane

Ecocert certified products **V**  
COSMOS certified products **V**

### Dispersions:

Xperse® - Different Zano® grades in various emollients, such as CCT and sesame oil, also in combination with TiO<sub>2</sub> **VV**