

Technical Data Sheet

ZinClear® XP65 COCO (65 wt% zinc oxide dispersed in Coco-Caprylate / Caprate)

Introduction

ZinClear-XP65 COCO is a 65 wt% dispersion of uncoated zinc oxide in coco-caprylate / caprate, for use in a variety of sun care, skincare and cosmetics applications.

ZinClear-XP65 COCO provides zinc oxide (ZnO) particles offering broad spectrum UV protection with exceptional transparency, allowing the formulation of elegant skincare products that do not cause unacceptable whiteness on the skin.

Chemical Composition

INCI Name	CAS No.
Zinc Oxide	1314-13-2
Coco-caprylate / caprate	95912-86-0
Polyglyceryl-3 Polyricinoleate	29894-35-7
Isostearic acid	30399-84-9

Features and Benefits

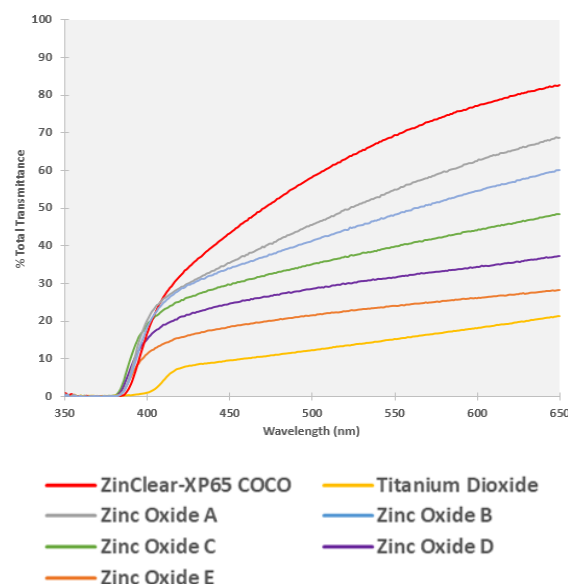
- Transparent / Non-whitening
- Broad Spectrum UVA/UVB protection
- Suitable for all skin types
- Easy to handle dispersion
- NPA Certified
- COSMOS Certified

Typical Applications

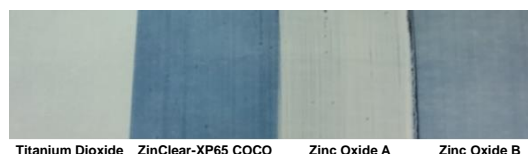
- Natural sunscreens, cosmetics and skincare
- Mineral only sunscreens
- Low irritant or sensitive skin sunscreens
- Baby and children's sun care products
- Nappy rash creams and balms
- Daily wear skincare and cosmetics delivering sun protection
- Lip balms
- Colour cosmetics

Physical Characteristics

ZinClear-XP65 COCO dispersions are supplied in the form of a viscous, free flowing liquid. The dispersion is off-white to peachy beige in colour but when applied to the skin will remain highly transparent, even at high loadings. A comparison of ZinClear-XP65 COCO transparency to competitor ZnO products is shown in the graph below.



The market leading transparency of ZinClear-XP65 COCO is also shown in the draw-down charts below against competitor materials.



Broad Spectrum Protection

ZinClear-XP65 COCO has a broad absorption profile spanning both UVA and UVB. ZinClear-XP65 COCO may be used alone or in combination with other UV filters to produce high SPF sunscreens that will meet the UVAPF>1/3SPF criterion where required. ZinClear-XP65 COCO can also be formulated for the critical wavelength to reach 370nm where required. ZinClear-XP65 COCO is photostable in formulations and is not prone to

degrade or lose effectiveness under influence of UV.

Typical Performance / Required Loadings

ZinClear-XP65 COCO can be formulated at high loadings to achieve high SPF without compromising the clarity of the end product. The table below serves as a guide only, as the SPF will additionally depend on the type of formulation.

SPF Target	ZinClear-XP65 COCO Loading	Equivalent Zinc Oxide Loading
15-20	20 – 30%	~13 – 19.5%
20-40	30 – 35%	~19.5 – 23%
40+	35 – 38%	~23 – 25%

Antaria recommends that formulators conduct *in vivo* SPF testing when possible during product development to ensure reliability of results.

ZinClear-XP65 COCO Particle Morphology

The zinc oxide particles in ZinClear-XP65 COCO consist of primary particles, which form aggregates up to a few tens of micrometres in size. Larger aggregates have a unique porous structure that provides a closer match between the refractive index of the particle and the refractive index of the emollient, resulting in high transparency.

Natural Certification

ZinClear-XP65 COCO is currently certified as compliant with the Natural Product Association (USA) & COSMOS (EU). Certificates available on request.

Regulatory Status

For use as a UV filter, zinc oxide is approved within the limits prescribed in the table below.

Region	Approval Limit
USA	25%
Canada	25%
EU union	25%
Japan	No Limit
Korea	25%
Australia / NZ	No Limit
ASEAN	25%
China	25%
South Africa	25%

Handling

It is recommended that all ZinClear-XP65 COCO dispersions be well mixed prior to use. A minor loss of product as sediment in the bottom of the container may be experienced.

Consult the SDS for additional handling or safety information.

Packaging

Pack Type	Unit size	Full pallet
HDPE Pail	20kg	640kg
Steel Drum	200kg	800kg

Shelf Life

ZinClear-XP65 COCO has a stability shelf-life of 24 months when stored under standard conditions (above 5°C and below 30°C) after which retest is required to extend the shelf life to 3 years from manufacturing date.

ZinClear XP65COCO forms part of the ZinClear® range of products. ZinClear® and its logo are registered trademarks of Antaria Pty Ltd. Patents pending.

ZinClear-XP65 COCO: Technical Specification

Appearance	Off-white to light yellow (Visual)
ZnO Assay	63.0 – 67.0 % (Ion chromatography)
Secondary Particle Size (D[4,3])	≥ 1.00 µm (Laser Light Scattering)

Zinc oxide contained in ZinClear-XP65 COCO is tested prior to dispersion and complies with the current USP Monograph for zinc oxide.