Technical Data Sheet

ZinClear® XP61 JJ + JOE 61 wt% Zinc Oxide dispersed in Jojoba Oil

Introduction

ZinClear®-XP61 JJ+ JOE is a 61 wt% dispersion of uncoated zinc oxide in Jojoba oil, for use in a variety of suncare, skincare and cosmetics applications.

ZinClear- XP61 JJ+ JOE Dispersion 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
Simmondsia Chinensis (Jojoba) Seed Oil	73398-61-5
Jojoba Esters: Simmondsia Chinensis (Jojoba) Oil (and) Hydrogenated Jojoba Oil)	27924-99-8
Polyhydroxystearic acid	2724-58-5

Features and Benefits

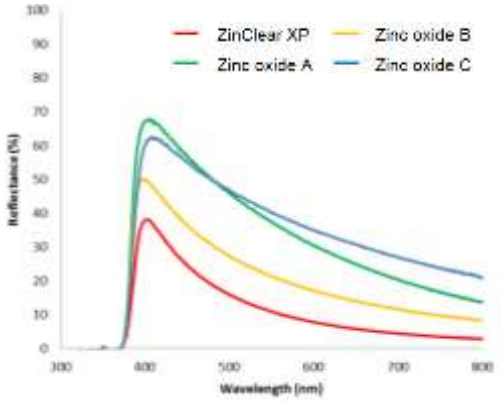
- Transparent / Non-whitening
- Broad Spectrum UVA/UVB protection
- Suitable for all skin types
- Easy to handle dispersion

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- XP61 JJ+ JOE Dispersion is supplied in the form of a viscous, free flowing liquid. The dispersion color ranges from Off-White to pale yellow/yellow-green, but when applied to the skin will remain transparent, even at high loadings. A comparison of ZinClear XP™ (100 wt% ZnO) transparency to competitor zinc oxide products is shown in the chart below.



The market leading transparency of ZinClear XP™ is demonstrated below in dispersion draw down charts against competitor materials



Zinc oxide B | Zinc oxide D | **ZinClear XP™** | Zinc oxide A | Zinc oxide C

Broad Spectrum Protection

ZinClear XP™ has a broad absorption profile spanning both UVA and UVB. Therefore, ZinClear- XP61 JJ+ JOE Coconut may be used as a sole UV filter, or in combination with chemical UV filters to produce high SPF sunscreens which comply to both European (UVAPF > 1/3 SPF), and FDA's (Critical Wavelength ≥ 370 nm) Broad Spectrum requirements. ZinClear- XP61 JJ+ JOE Coconut is photostable in formulations and is not prone to degrade or lose effectiveness under influence of UV.

The information set out above is indicative and provided for illustrative purposes only. Antaria does not guarantee that the product is fit for any particular purpose and the user is responsible for conducting its own evaluations and tests. Antaria's liability is limited by its general terms and conditions of sales which are available upon request. This product information is current as of June2025.

Typical Performance / Required Loadings

ZinClear- XP61 JJ+ JOE Dispersion 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-XP Dispersion Loading	Equivalent ZnO Loading
15-20	20 – 30%	~12.2-18.3%
20-40	30 – 35%	~18.3-21.35%
40+	35 – 38%	~21.35-23.18%

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

Particle Morphology

The zinc oxide particles in ZinClear- XP61 JJ+ JOE Dispersion 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.

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%
European Union (EU)	25%
Japan	No Limit
Korea	25%
Australia / NZ	No Limit
ASEAN	25%
China	25%
South Africa	25%

Handling

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

Consult the MSDS for additional handling or safety information.

Packaging

Pack Type	Unit Size	Full Pallet
HDPE Pail	19 kg	655 kg
Steel Drum	190 kg	779 kg
IBC	1260 kg	1260 kg

Shelf Life

ZinClear-XP61 JJ+ JOE has a proposed shelf-life of 24 months, as per completed Accelerated Stability Studies, when stored under label storage conditions (above 5°C and below 30°C). Retest is required after 24 months, to extend the shelf life to 3 years from manufacturing date.

ZinClear-XP Dispersion forms part of the ZinClear® range of products. ZinClear-XP Dispersion, ZinClear® and their logos are registered trademarks of Antaria Pty Ltd.

ZinClear-XP61 JJ +JOE Dispersion Specifications

Appearance	Off-White to Pale yellow/ yellow-green (Visual)
ZnO Assay	59.0 – 63.0 % (High Performance Ion Chromatography)
Secondary Particle Size (D [4,3])	≥ 1.00 µm (Dynamic Light Scattering)

Zinc oxide contained in ZinClear®-XP61 JJ+ JOE is tested prior to dispersion and complies with the current USP Monograph for zinc oxide.

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