

ZnO Powders

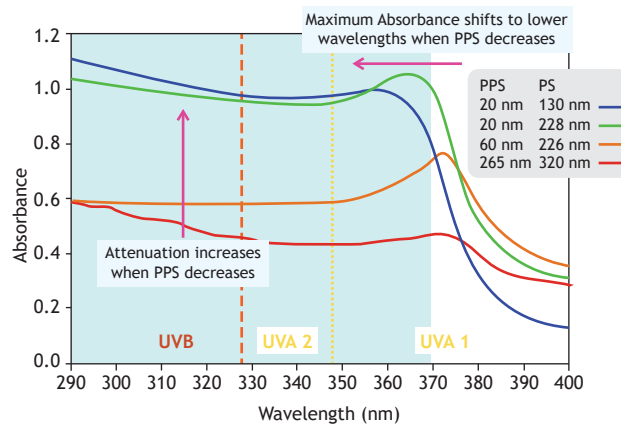
For Sunscreen Applications



Zinc Oxide (ZnO) is a mineral UV filter available in a range of primary particle sizes (PPS) and varying optical properties. Because of its relatively low refractive index, large particle size ZnO can be used in formulas without causing significant whitening. It is ideal for formulating mild or hypoallergenic sun care products with UVA/UVB protection for babies and people with sensitive skin.

To improve dispersion in formulas and performance as a UV filter, ZnO can be surface treated with various organic compounds. Kobo ZnO powders are all “Non-Nano” as measured according to the last Nano Guidance from Cosmetics Europe (Interpretation of the Definition of the Term “Nanomaterial” according to the EU Cosmetic Regulation 1223/2009, May 24, 2019).

Kobo also offers a unique Non-Nano grade, ZnO-C, with a primary particle size distribution curve above 100nm as measured with Image Analysis. This ZnO-C also complies with Cosmetics Europe interpretation for non-nano material (see separate flyer).



Absorbance curves of four ZnO of different Primary Particle Sizes. Small PPS show higher UVB attenuation but lower UVA attenuation than larger PPS.



KSL-494

Natural Origin Beauty Sunscreen Face Balm



Part 1

- Pelemol® CCT - Phoenix Chemical: *Caprylic/Capric Triglyceride* 35.17%
- ZNO-660-ASGP7 - Kobo Products: *Zinc Oxide (And) Stearoyl Glutamic Acid (And) Polyhydroxystearic Acid* 26.73%
- JOS10M5 - Kobo Products: *Simmondsia Chinensis (Jojoba) Seed Oil (And) Silica* 3.60%
- MSS-500W - Kobo Products: *Silica* 3.60%
- SunBoost ATB Natural - Kobo Products: *Argania Spinosa Kernel Oil(And) Tocopheryl Acetate (And) Bisabolol* 3.60%
- CASTOR OIL - Arista Industries, Inc.: *Ricinus Communis (Castor) Seed Oil* 2.90%
- LUSPLAN™ DD-DA7 - Nippon Fine Chemical/Kobo Products: *Dimer Dilinoleyl Dimer Dilinoleate* 1.80%
- SISTERNA A10E-C - MMP International: *Acetylated Sucrose Distearate* 1.80%
- FLORITE PS-10 - Tomita/Kobo Products: *Calcium Silicate* 0.35%

Part 2

- CARNAUBA WAX SP 63P - Strahl & Pitch: *Copernicia Cerifera (Carnauba) Wax* 6.00%
- VEGETABLE WAX-SS1 (Non-GMO) - Ikeda: *Helianthus Annuus (Sunflower) Seed Wax (And) Phytosterols* 5.00%
- Plandool™-LG3 - Nippon Fine Chemical/Kobo Products: *Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate* 3.50%
- Beeswax White Sp 422P - Strahl & Pitch: *Beeswax* 3.25%
- Shea Butter - BASF: *Shea Butter* 2.00%
- Lexgard® Natural - Inolex: *Glyceryl Caprylate (And) Glyceryl Undecylenate* 0.70%

Manufacturing Procedure

1. Combine Part 1 at 80°C. Homogenize until uniform.
2. Add Part 2 to batch at 80°C. Prop mix until uniform.
3. Pour into mold at 75°C.

Description

A clean and natural origin mineral sunscreen balm formula for the face. This lightweight and non-greasy formula contains ZNO-660-ASGP7, an ASGP-treated Zinc Oxide. This treatment renders powders superdispersible, allowing powders to disperse easily with minimal energy. SunBoost ATB Natural boosts SPF and PFA values. JOS10M5, a fumed silica gellant in Jojoba Oil, LUSPLAN™ DD-DA7 and Plandool™-LG3 plant derived lanolin alternative esters, work together as a skin moisturizing complex. The combination of microspheres, MSS-500W and FLORITE PS-10, allows the formula to glide smoothly on skin with a non-greasy feel.

Active Ingredient

Zinc Oxide 24.86%

Testing

SPF: in vivo on 6 subjects
CW: FDA method

KOBO








USA

BRASIL

UK

FRANCE

ASIA PACIFIC

Product Name	INCI Name	Active %	Primary Part. Size (nm)	EU Compliance
ZNO XZ-11S3L	Zinc Oxide (And) Triethoxycaprylylsilane	97	20 - 30	Compliant
ZnO-660SS-11S5	Zinc Oxide (And) Triethoxycaprylylsilane	95	20 - 30	Compliant
ZNO-660-ASGP7  	Zinc Oxide (And) Stearoyl Glutamic Acid (And) Polyhydroxystearic Acid	93	25	Compliant
MZO-35-11S5	Zinc Oxide (And) Triethoxycaprylylsilane	95	35	Compliant
MZO-35-I3	Zinc Oxide (And) Isopropyl Titanium Triisostearate	93	35	-
MZO-35-NOE7 	Zinc Oxide (And) Hydrogenated Olive Oil Stearyl Esters	93	35	Compliant
ZNO-750-11SP	Zinc Oxide (And) Triethoxycaprylylsilane (And) Polyhydroxystearic Acid	94	35	Compliant
ZNO-750-ASG5 	Zinc Oxide (And) Stearoyl Glutamic Acid	95	35	Compliant
ZnO-750-ASGP6  	Zinc Oxide (And) Stearoyl Glutamic Acid (And) Polyhydroxystearic Acid	94	35	Compliant
ZnO-750-NJE7 	Zinc Oxide (And) Jojoba Esters	92	35	Compliant
ZNO FSF-11S4	Zinc Oxide (And) Triethoxycaprylylsilane	96	60	Compliant
KOBO ZnO-B	Zinc Oxide	100	90	Compliant
A120-ZNO-11S3	Zinc Oxide (And) Triethoxycaprylylsilane	97	120	N/A
ZnO-USP1-I2	Zinc Oxide (And) Isopropyl Titanium Triisostearate	98	120	N/A



 Raw materials approved by COSMOS

 Natural Origin Product

This table was prepared to assist in formulating with Zinc Oxide Powders. The information contained herein is believed to be accurate at the time of printing and represents typical values, but should not be used as a substitute for product specification sheets.

The Non-Nano Powders listed in this flyer have been tested by light scattering method, according to the Cosmetics Europe Nano Guidance Package; Part II: Interpretation of the Definition of the Term “nanomaterial”

according to the EU Cosmetic Regulation 1223/2009, published on May 24, 2019.

We are also listing the primary particle size - PPS (nm) - for comparison purposes.

EU Compliance: These ZnO comply with the conditions for Zinc Oxide (nano) as set forth in the Annex VI to Regulation (EC) No 1223/2009.

We recommend that customers make their own assessment when using particle size data for the purpose of identifying nanomaterials in their finished formulations.

Please contact our team at techservice@koboproductsinc.com for additional information on this subject.

US 20180235855A1, WO 2007048057A3

Zinc Oxide powder blends, their production and use

US 9949904B2

Method of formulating Zinc Oxide powder blends for balanced UVA/UVB attenuation

US 8623386B2, WO 2009126859, JP 8506995

Natural ester, wax or oil treated pigment, process for production thereof, and cosmetic made therewith

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ZnO Powders

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