



# HALLBRITE® ZDX CLEAR

High performance, non-whitening zinc oxide dispersion designed for effective sun protection

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# HALLBRITE® ZDX CLEAR

The increasing importance of skin tone inclusivity in cosmetics drives the demand for invisible coverage from sun care products. In addition, the global zinc oxide market is on the rise as beauty brands and formulators look to the mineral filter as a solution for creating broad spectrum sun care products without the use of regionally banned UV filters. However, zinc oxide presents a set of challenges for formulators aiming to achieve high SPF while also providing a pleasant skin feel and low whitening. The newest addition to our mineral dispersion line, HallBrite® ZDX Clear, was intentionally designed to provide ease in formulating zinc oxide systems and confidence in achieving high sun protection performance while delivering impressive transparency. HallBrite® ZDX Clear: sun protection for everyone under the sun.

## HIGH PERFORMANCE, NON-WHITENING DISPERSION

HallBrite® ZDX Clear is a formulator-friendly, non-nano zinc oxide dispersion developed to deliver effective sun protection while creating formulations suitable for all skin types.

- Transparent/non-whitening
- Pourable, easy to handle liquid dispersion
- Broad spectrum UVA/UVB protection
- High performance zinc oxide dispersion
- High zinc oxide load (68%) enables formulation flexibility

## TECHNICAL DATA

- INCI Name: Zinc Oxide (68%), Butyloctyl Salicylate, Ethylhexyl Isononanoate, Ethylhexyl Methoxycrylene, Polyhydroxystearic Acid
- Critical wavelength (in formulations) ~ 372 – 374 nm
- UVAPF: SPF ratio  $\geq$  1:3
- UVA1/UV  $\geq$  0.7
- Non-nano zinc oxide

## APPLICATIONS

- Daily wear with SPF
- Skin care
- Color cosmetics

## RECOMMENDED USAGE LEVELS

SPF Target	HallBrite® ZDX Clear Use Level*
15	13.0 – 14.0%
30	24.0 – 25.0%
50+	36.0 – 37.0%

\*The table serves as a general guide for recommended use level. The SPF of a formulation will additionally depend on formulation type.








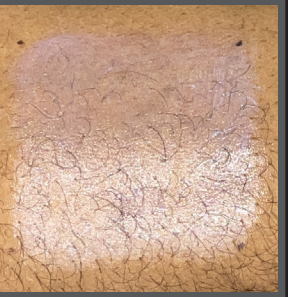

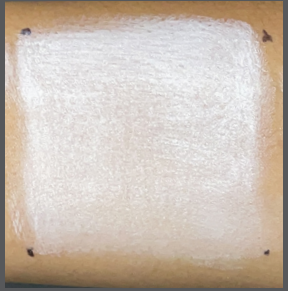
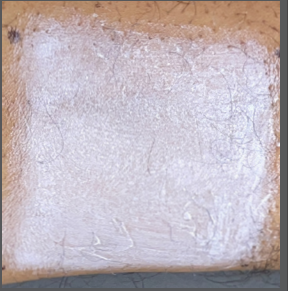

## FORMULATION SPOTLIGHT

JZ15-223 (Oil-in-Water SPF 50 Formula)	
<b>HallBrite® ZDX Clear</b>	37.00
Biochemica® Vitamin E Natural	0.50
Biochemica® Craft Shea Butter	3.00
Cetearyl Glucoside (and) Cetearyl Alcohol	4.00
Xanthan Gum (Pharma grade)	0.30
Glycerin	4.00
Trisodium Ethylenediamine Disuccinate (37% Active)	0.30
Water (Aqua)	Up to 100
Preservative	a.n.
Silica (Spherical 12 $\mu$ m)	2.00
Sodium Hydroxide (20% Aqueous)	a.n.
<b>Total (%)</b>	<b>100.00</b>
<b>SPF (FDA 2021 static, 3 subjects)</b>	<b>60</b>
<b>Critical wavelength, nm</b>	<b>372</b>
<b>UVAPF (Colipa guideline, 2011)</b>	<b>18</b>
<b>UVA1/UV, Calculated</b>	<b>0.80</b>
<b>40 min WR (FDA 2021)</b>	<b>Pass</b>

## Formulation Highlights

- Quick-absorbing formula with flowable viscosity at high zinc oxide load (25%)
- HallBrite® ZDX Clear enables to reach high SPF performance of 50 as sole sunscreen active
- High dispersion level provides foundation for stable formula using simple emulsifier system

## WHITENING EVALUATION

	Fitzpatrick skin type II (F)	Fitzpatrick skin type IV (F)	Fitzpatrick skin type IV (M)	Fitzpatrick skin type V (M)
<b>HallBrite® ZDX Clear</b> (68% ZnO)				
<b>Competitor 1</b> Low whitening grade (69% ZnO)				
<b>Competitor 2</b> Standard grade (78% ZnO)				

\*The table demonstrates 0.10 g of dispersion applied to 5 x 5 cm area on volar forearm. The dispersion was rubbed on the skin for a total of 30 seconds.

HallBrite® ZDX Clear demonstrates minimal whitening on a wide range of Fitzpatrick skin types II-V.

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