CASE STUDY · ZINC OXIDE DISPERSION

One dispersion swap took a mineral sunscreen from SPF 30 to SPF 50+.

Switching to Vizor cut dispersion usage by 2.5 points, from 28.5% to 26%, and still delivered the higher SPF.

Replacing the zinc oxide dispersion with Sheer Sperse Horizon Natural was the only change to the formula.

30	54.9	1
SPF before	Mean static SPF after, in vivo	Ingredient changed

THE PROBLEM

Stuck at SPF 30 against an SPF 40 target.

The silicone-free, ethoxylate-free body sunscreen used 28.5% Eclipse D1-SU70, a 70% zinc oxide dispersion. The customer liked the formula and the project was close to approval, so rebuilding it was not an option.

Dispersion	**Eclipse D1-SU70 · Uviva**
INCI	**Zinc Oxide, C13-15 Alkane, Polyhydroxystearic Acid**
Zinc oxide solids	**70%**
Usage level in formula	**28.5%**
Result	**SPF 30, below target**

THE VIZOR SOLUTION

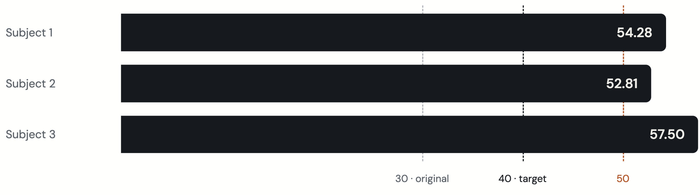
Swap one ingredient. Change nothing else.

Vizor recommended replacing the competitor dispersion with 26% Sheer Sperse Horizon Natural. Every other ingredient and processing parameter stayed the same.

Dispersion	**Sheer Sperse Horizon Natural · Vizor**
INCI	**Zinc Oxide, Dodecane, C12-15 Alkyl Benzoate, Polyhydroxystearic Acid, Ethyl Ferulate**
Zinc oxide solids	**≈ 70%**
Usage level in formula	**26.0%**
Result	**SPF 50+ in all subjects**

IN VIVO PROOF

Every subject cleared SPF 50.



Static SPF, in vivo, three subjects. Arithmetic mean 54.86. Scale 0 to 60.

THE TAKEAWAY

Similar solids on paper do not mean similar performance in the formula.

Two dispersions can list similar zinc oxide solids and still perform very differently in a finished sunscreen. Here, changing only the dispersion, and using less of it, moved the formula from SPF 30 to above SPF 50 in every subject tested. The manufacturer beat the customer's target without reformulating.

SHORT OF YOUR SPF TARGET?

In vivo result came in under target? Let's find the SPF you're missing.

A short conversation with our chemists can show where the gap is and how to close it.

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