
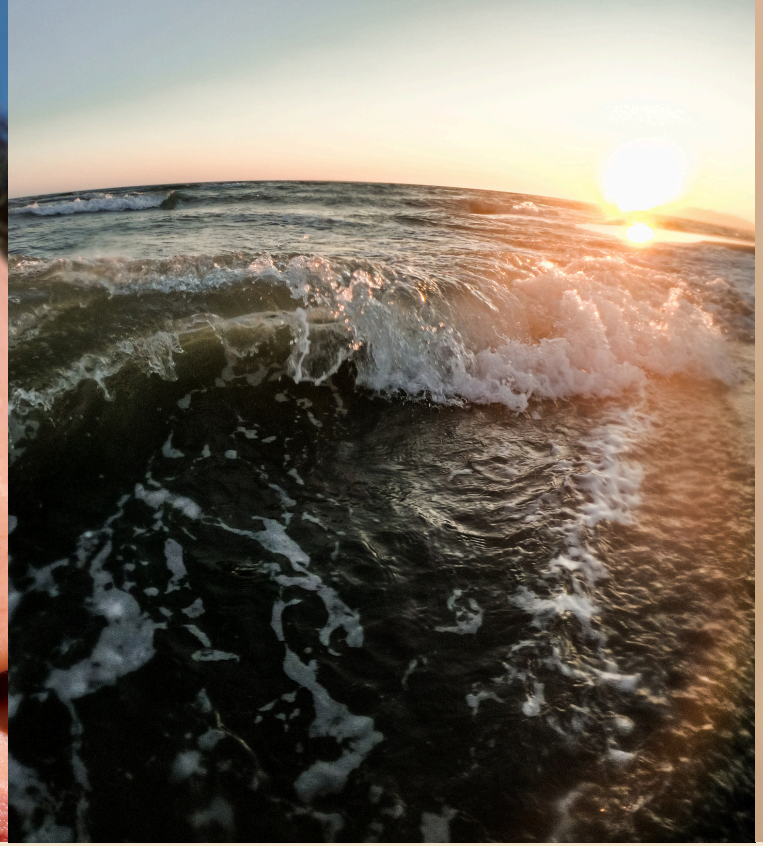


# SPF Boosters

## Your essential selection guide

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## What is an SPF booster?

An SPF booster is typically defined as a cosmetic ingredient that enhances the performance of a sunscreen by optimising the efficacy of UV filters.

SPF boosters are not regulated UV filters and are not intended to replace UV filters. Instead, they are designed to enhance the efficiency and stability of UV filters used in sunscreens.

SPF boosters have traditionally been designed to increase UVB protection. However, with growing demand for broad spectrum protection claims, some are now proven to also boost in the UVA region to satisfy UVA-PF requirements, offering a dual benefit to deliver complete skin protection.

## What do SPF boosters do?

Depending on their chemistry and mechanism, SPF boosters can:

- Increase SPF levels, without increasing the level of UV filters
- Improve the distribution of UV filters in sunscreen formulations
- Enhance the film formation and spreadability of a sunscreen on the skin
- Allow the creation of sunscreens with lighter, more elegant textures
- Reduce UV filter levels whilst maintaining SPF within global regulatory requirements, lowering formulation costs and minimising the environmental impact of sunscreens

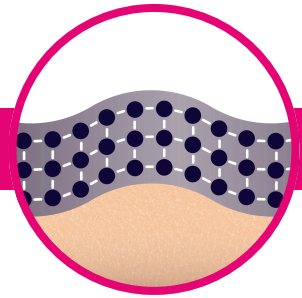
SPF boosters **do not**:

- Replace regulated UV filters
- Guarantee a fixed SPF increase across all formulations
- Inherently improve UVA protection

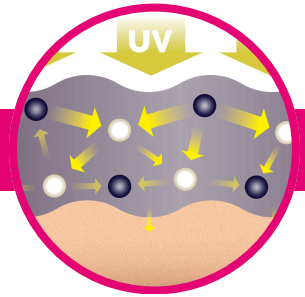
## How do SPF boosters work?

SPF boosters employ different strategies to improve the efficacy of UV filters and the overall performance of your suncare formulation.

### Improved film formation



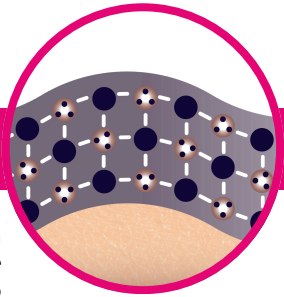
It is essential that the sunscreen is evenly distributed over the skin's surface for maximum protection, ensuring that a coherent protective film is formed on the skin after application and dry-down.




### Increased UV scattering

Enhanced scattering and reflectance of UV light ensures less interaction with the skin.

### Rheology modification



Product rheology is critical to ensure that the sunscreen can spread easily over the skin during application. The rapid recovery of structure after spreading is crucial to maintain an even film on the skin's surface.



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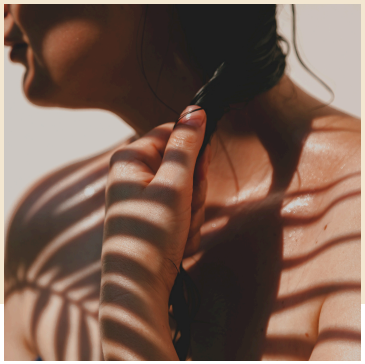

# Benefits of SPF boosters

SPF boosters bridge the space between rising demand for superior protection and the realities of formulation complexity, allowing the creation of sun care products that are both highly effective and beautifully sensorial.

## 01 Support UV filter optimisation and reduced inclusion levels

As brands face pressure to deliver pleasant textures, comply with global regulatory restrictions and minimise costs, SPF boosters help to optimise UV filter systems. This can increase UV filter efficiency at lower inclusion levels, allowing flexibility in formulation design without compromising on protection.

**SPF boosters allow the creation of adaptable, cost-effective formulations with greater regulatory resilience.**

## 02 Enable high SPF without compromising on sensory experience

Balancing high SPF with cosmetic elegance can often be a challenge as increased levels of UV filters can create heavier textures, a draggy application experience and leave a greasy after-feel. SPF boosters help to overcome this by improving UV filter efficiency at lower inclusion levels to support lighter, more elegant textures for high SPF sunscreens.

**SPF boosters support the creation of high protection sunscreens that combine proven performance with wearability.**

## 03 Improve reliability and consistency of SPF performance

Formulating high protection sunscreens can be challenging, not only in achieving the target SPF, but in ensuring that protection remains consistent everywhere that it is applied. SPF boosters can enhance the spreadability of sunscreens to support the even distribution of UV filters throughout the applied layer, reducing variability in in vitro and in vivo SPF testing.

**SPF boosters help to instil greater confidence in SPF performance, testing and claims.**

## 04 Improved formulation textures, formats and claims

As daily wear sunscreens continue to evolve, the demand grows for experience-led, ultra-light textures that still deliver maximum skin protection with additional skin care benefits. By enabling reduced UV filter levels whilst maintaining high protection, SPF boosters can improve the skin feel and transparency of sunscreens, offering the flexibility to explore novel textures and delivery systems.

**SPF boosters encourage freedom to explore novel textures, formats and claims without compromising on protection.**

## 05 Future-ready sunscreens

The evolving regulatory landscape and environmental scrutiny faced by certain UV filters continues to shape sunscreen development, making it increasingly challenging to meet higher SPF targets whilst adhering to regulatory requirements and aligning with consumer expectations around environmental responsibility. SPF boosters reduce the reliance on UV filters to reach high SPF levels, ensuring regulatory and environmental expectations are met.

**SPF boosters can help in the design of sunscreens that meet sustainability goals and regulatory requirements.**

# Selecting your SPF booster

When selecting an SPF booster, it is important to consider:

- The target SPF range
- The formulation format and sensory goals
- The mechanism of action that is driving the 'boost'
- Which UV filter systems the SPF booster is compatible with

The next page of this booklet looks at the different characteristics and parameters of Croda's range of SPF boosting ingredients so that you can take the guesswork out of your selection process.

# *Selecting your* **SPF booster**

| | Product | INCI Name | Compatibilities: Emulsion type | Compatibilities: Formulation format | Compatibilities: UV filters* Mineral | Compatibilities: UV filters* Chemical | Compatibilities: UV filters* Hybrid | Credentials: Natural content (ISO16128) | Credentials: Vegan-suitable** | Credentials: COSMOS | Credentials: IECIC | Credentials: Halal | Credentials: Biodegradable*** | Credentials: RSPO MBAL | Use level (w/w %) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Film formation | Crodabond™ CSN | Hydrogenated Castor Oil/Sebacic Acid Copolymer | O/W | All | ✓ | ✓ | | 100 | ✓ | ✓ | ✓ | ✓ | R | N/A | 3 |
| | SolPerForm™ 100 | Aqua (and) Hydrolyzed Wheat Protein/PVP Crosspolymer | O/W | All | ✓ | ✓ | | 56.5 | ✓ | | ✓ | ✓ | P | N/A | 2 |
| | OleoCraft™ LP-20 | Polyamide-8 | All | All | ✓ | ✓ | | 92 | ✓ | | ✓ | ✓ | | N/A | 1 - 3 |
| | OleoCraft™ MP-30 | Polyamide-3 | All | All | ✓ | ✓ | | 71 | ✓ | | | ✓ | | N/A | 1 - 3 |
| UV scattering | ChromaPur™ CV2 | Cellulose | All | All | ✓ | ✓ | | 100 | ✓ | ✓ | ✓ | ✓ | R | N/A | 1 – 3 |
| | ChromaPur™ CV7 | Cellulose | All | All | ✓ | ✓ | | 100 | ✓ | ✓ | ✓ | ✓ | R | N/A | 1 – 3 |
| Rheology modification | NatraGem™ EW | Glyceryl Stearate (and) Polyglyceryl-6 Palmitate/Succinate (and) Cetearyl Alcohol | O/W | High viscosity | ✓ | ✓ | ✓ | 100 | ✓ | | | ✓ | R | ✓ | 3 - 7 |
| | NatraGem™ E145 | Aqua (and) Polyglyceryl-4 Laurate/Succinate | O/W | Low viscosity | ✓ | ✓ | | 100 | ✓ | | | ✓ | I | ✓ | 1 - 5 |
| | Natrineo™ CR8 | Cetearyl/Cetearyl Polypropanediol-8 Phosphate (and) Cetearyl Alcohol | W/O/W | High viscosity | ✓ | ✓ | | 92 | ✓ | ✓ | | ✓ | EXR | ✓ | 1 - 3 |
| | Syncrowax™ SB1 | Synthetic Beeswax | All | All | ✓ | ✓ | | 79 | ✓ | | ✓ | ✓ | | ✓ | 2 - 15 |
| | Seatons Beeswax | Cera Alba | All | All | ✓ | ✓ | | 100 | | | | | | N/A | 2 - 15 |
| | Seatons Rice Bran Wax | Oryza Sativa (Rice) Bran Wax | All | All | ✓ | ✓ | | 100 | ✓ | | | | | N/A | 2 - 15 |

**Certifications:** ✓ = certified / meets the criteria

***UV filters:** *compatibility based on current data available and not an exhaustive list of compatible UV filters*

****Vegan-suitable***
*Can be considered to be generally suitable for vegan; however, as there is no single agreed definition nor a standard, global certification, if you are interested in making a vegan claim, please request our Vegan Suitability statement for specifics on this product, and compare to the certification(s) you are seeking to meet*

*****Biodegradable***
***R** = Readily biodegradable **I** = Inherently biodegradable **P** = Potentially biodegradable*
***EXR** = Expected to be readily biodegradable*



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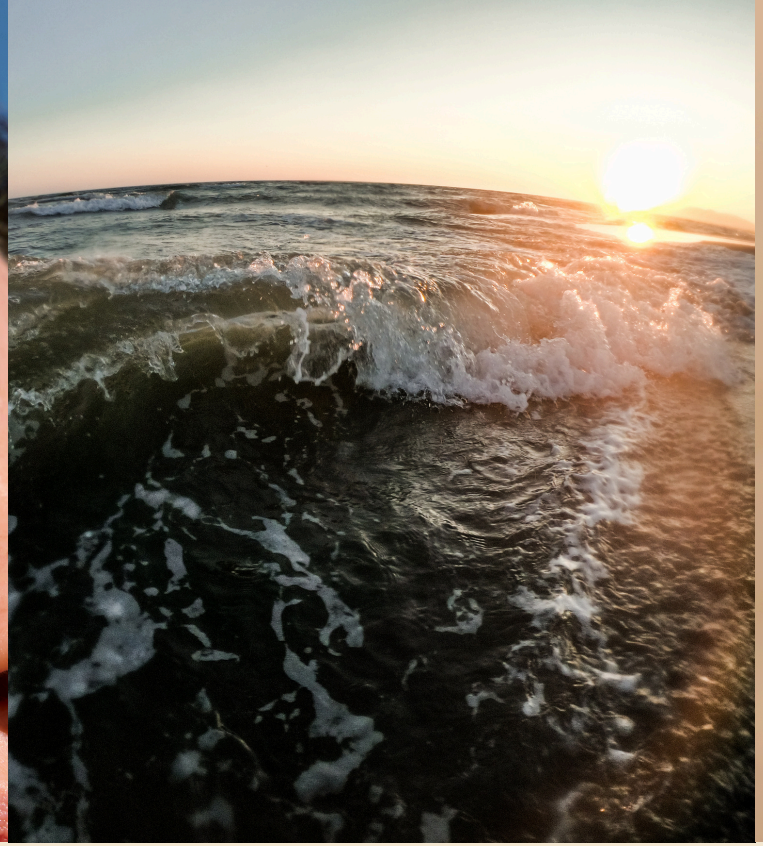




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