

SUN CARE® SOLUTIONS

Improving sunscreen performance through pioneering
stability science

HALLSTAR 

Hallstar offers decades of sun care expertise and unique formulation solutions. We work collaboratively with companies around the world to enhance next generation products.

Sun care products present some of the most daunting challenges for beauty and personal care formulators. Adding to this complexity, nearly every global region has its own consumer preferences and SPF/PFA rules. A UV filter or active ingredient approved in one country may not be acceptable in another.

Hallstar pioneered photostability science, and today we offer the most powerful and unique photostabilization, anti-aging and sun protection technology on the market. By working closely with our customers, we can help meet the tough challenges of sun degradation and aesthetic needs—as well as regulatory and market preferences—so you can innovate with confidence.

Custom formulations based on changing customer needs

Hallstar is well known for its deep competency in photostability science, ester chemistry, emulsifiers and functional naturals. Our broad portfolio includes thousands of ready-made formulations, but we also offer the option to create entirely unique, customer-specific formulated solutions. Our state-of-the-art global laboratories offer onsite *in vitro* testing with solar simulation and unsurpassed technical support.

**LET'S WORK
WONDERS®**

PHOTOSTABILIZATION AND ANTI-AGING

Hallstar photostabilizers provide safe, efficient and persistent stabilization for a wide variety of personal care ingredients. Unlike UV filters that strongly absorb solar radiation, the effectively non-absorbing SolaStay® products provide a stabilization effect to formulations by returning UV filters to their ground states. These quenching mechanisms eliminate UV filter instability and the creation of harmful reactive oxygen species upon exposure to sunlight. These powerful and innovative products deliver exceptional stabilization, aesthetics and feel to formulations.

HallBrite® BHB (Butyloctyl Salicylate)

A highly effective solubilizer for sunscreen actives and an excellent carrier and dispersant for micronized titanium dioxide and zinc oxide, HallBrite® BHB has polarity higher than traditional solvents, and low viscosity. This product also improves formulation aesthetics while imparting an elegant moisturizing feel to the skin as an odorless, colorless and tasteless liquid.

TAN Oléobooster® (Sesamum Indicum Seed Oil, Tyrosine, Calophyllum Inophyllum Seed Oil, Glyceryl Stearate)

Tan Oléobooster® offers a 100% natural way to boost tanning while preventing UV damage. It contains a lipo-solubilized form of tyrosine, the enzyme that stimulates melanin: a dose of only 0.33 percent safely intensifies melanin production up to 85.2 percent.

Polycrylene® (Polyester-8)

This is a triplet state-quenching photostabilizer ideal for customers seeking to replace octocrylene as a photostabilizer for Avobenzene.

AvoBrite™ (Acrylates Copolymer)

AvoBrite® is the first cost effective, globally approved and China-compliant solution for stabilizing Butyl Methoxydibenzoylmethane (Avobenzene) and Avenbenzone combinations. AvoBrite® has been clinically proven to protect Avobenzene from degrading upon sun exposure and releasing damaging free radicals. With colorless and smooth AvoBrite®, sun care products can safely maximize the strong UV absorption powers of Avobenzene and enter lucrative new markets.

- China approved
- Safer high SPF (50+) protection
- Cost effective PA++++ performance

SolaStay® S1 (Ethylhexyl Methoxycrylene)

The most powerful photostabilizer on the market today. SolaStay® S1 preserves the effectiveness of UV filters by interacting with both the singlet and triplet states. It returns UV filters to their ground states — without absorbing sunlight. An outstanding solvent for crystalline UV filters, SolaStay® S1 is easily emulsified and suitable for use in lotion, cream, spray, stick and gel formulations

Micah™

Micah is the first and only product on the market that stops sun damage before it begins. Using a breakthrough discovery in fused-ring cyanoacrylates, Micah returns photosensitizers to the ground state, stopping the formation of damaging reactive oxygen species (ROS) and free radicals. Independent testing has proven that Micah effectively prevents ROS and markers associated with inflammation, photoaging, redness and irritation. Safe and effective, Micah can give a range of products a commanding lead in the highly competitive anti-aging market.

- Stops formation of FR
- Broader protection UVA-1 region (340-400 nm)
- Photostable
- Colorless
- No metabolic interference

MINERAL DISPERSIONS

TITANIUM DIOXIDE MINERAL UV FILTERS

Hallstar's innovative mineral UV filter systems use zinc oxide and titanium dioxide to refract and reflect light away from the skin. The HallBrite® EZ-FLO TDX also solves the aesthetic and sensory challenges of using mineral UV filters by encasing them in a patented C3+ coating. The specially surface-treated mineral UV filter is delivered in a readily flowing liquid dispersion that promotes stability in both mineral and mixed organic and mineral UV filter systems as well as reduced whitening and improved UV attenuation—a unique set of benefits not previously found in the market. When combined with our industry-leading stabilization technology SolaStay® S1, Hallstar's mineral UV filter systems offer an added layer of powerful photostabilization.

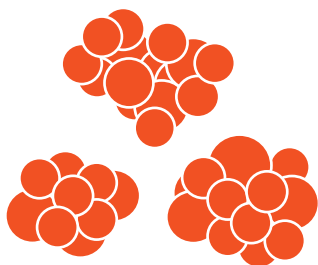
HallBrite® EZ-FLO TDX (Butyloctyl Salicylate, Titanium Dioxide [nano], Triceteareth-4 Phosphate, Dimethicone Crosspolymer, Silica)

This mineral UV filter system with patented C3+ coating technology offers superior whitening reduction, UV attenuation and sensory characteristics, with easy pourability. These properties lead to a highly stable, increased SPF product with smooth lotion consistency and no perceptible particulates. The product is especially suited for high SPF applications.

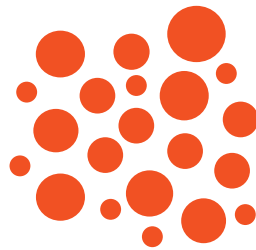
HallBrite® EZ-FLO TDX Plus (Butyloctyl Salicylate, Titanium Dioxide [nano], C12-15 Alkyl Benzoate, Ethylhexyl Methoxycrylene, Triceteareth-4 Phosphate, Dimethicone Crosspolymer, Silica)

The same aesthetic and sensory properties of HallBrite® EZ-FLO TDX are combined with SolaStay® S₁ (Ethylhexyl Methoxycrylene) to mitigate the photocatalytic and reactive oxygen species-generating activities of the oxide, and to photostabilize Butyl Methoxydibenzoylmethane (Avobenzone) when present. This product is ideally suited for achieving high SPFs in regions requiring SPF/PFA ≤ 3 .

HALLBRITE® BHB ELMINATES CONGLOMERATION



Before



After



ZINC OXIDE MINERAL UV FILTERS

Combining the benefits of a readily flowable zinc oxide dispersion with Hallstar's patented photostabilization expertise, Hallstar's newest additions to our mineral dispersion line include HallBrite® EZ-FLO ZDX and HallBrite® EZ-FLO ZDX Plus. These products combine the benefits of industry-leading ZnO performance with built-in photostabilization technology.

HallBrite® EZ-FLO ZDX
(Zinc Oxide [non nano]
60%, Butyloctyl Salicylate,
Triceteareth-4 Phosphate,
Trimethoxycaprylylsilane)

HallBrite® EZ-FLO ZDX Plus
(Zinc Oxide [non nano]
58%, Butyloctyl Salicylate,
Ethylhexyl Methoxycrylene,
Triceteareth-4 Phosphate,
Trimethoxycaprylylsilane)



EMOLLIENTS

Hallstar emollients can add a variety of sensory-enhancing characteristics and textures to formulations. From elegant slip, light skin feel and quick-spreading behavior to thick conditioning needs with slower spread and heavier skin feel, Hallstar emollients are highly functional ingredients proven to enhance skin's hydration, elasticity and barrier function.

HallBrite® PSF (Undecylcrylene Dimethicone)

A versatile emollient with the aesthetic of silicone, HallBrite® PSF lends a silky feel to lotions and creams, while providing enhanced substantivity and water resistance. It also has superior organic compatibility and provides formulations with anti-whitening and detackification benefits. Aiding in the dispersion of metal oxides, this emollient is ideal for daily wear and sun care applications.

Sensolene® (Ethylhexyl Olivat)

This highly functional ingredient is endowed with emollient properties that provide high levels of skin compatibility with a smooth formulation appearance and texture. Thanks to its polarity, Sensolene® can help solubilize crystalline UV filters while providing a lighter touch to your higher SPF sunscreen.

Sensolene® Care DD (Lauryl Olivat)

This dynamic emollient offers protective effects and excellent spreading properties. The low temperature melting point, near

to the skin temperature, gives the product unique sensorial features. The clinically tested calming properties of Sensolene® Care DD make it a perfect ingredient for after sun products. COSMOS approved.

Olivem® 300 (Olive Oil PEG-7 Esters)

A water-soluble functional lipid with sebum recovering activities. Its strong emolliency and lubricant properties offer a distinctive skin smoothness and long-term moisturizing effects, and make it a very good choice for after sun products.

SOLUBILIZERS

Hallstar solubilizers are multifunctional ingredients that provide superior solvency for solid sun care actives, while offering excellent spreadability and additional resistance against wash off. Hallstar offers moderately polar and highly polar solubilizer options to suit specific formulation needs.

HallBrite® BHB (Butyloctyl Salicylate)

As a highly effective solubilizer for sunscreen actives with moderate polarity and low viscosity, HallBrite® BHB serves as an excellent carrier and dispersant for micronized titanium dioxide, zinc oxide and cosmetic colorants. This product also improves formulation aesthetics while imparting an elegant moisturizing feel to the skin in an odorless, colorless and tasteless liquid with low potential for irritation.

Spectrasolv® DMDA (Dimethyl Capramide)

A highly polar solubilizer for sunscreen actives particularly suited to high SPF formulations, Spectrasolv® DMDA has superior solvency compared to traditional esters and improves the freeze-thaw stability of emulsions.

EMULSIFIERS

Hallstar emulsifiers use complex combinations of fatty acids that optimize the uniformity and stability of formulations. Mimicking the surface lipid composition of skin, these naturally derived ingredients are also proven to reduce skin irritation and enhance SPF while lending exquisite skin feel to emulsions.

Olivem® 2020
(Ethylhexyl Olivate (and)
Sodium Acrylates Copolymer
(and) Polyglyceryl-4 Olivate)

Olivem® 2020 G
(Ethylhexyl Olivate (and)
Sodium Acrylates Copolymer
(and) Polyglyceryl-4 Oleate)

Olivem® 2020/Olivem® 2020 G is a next-generation, naturally derived cold process emulsifier offering excellent performance, natural dermollient functionality and superior sensoriality and hydration. Drawing from olive oil chemistry, Olivem® 2020's biomimetic properties have been clinically proven to soothe and restore human skin. Combined with energy efficient ingredients, Olivem® 2020 allows preparation of formulations without the added heat or high shear mixing required when blending oil and water. It's environmentally friendly and even contains >60% of renewable carbon based on ISO 16128 method. Ideal for a range of applications including face, eye and body care, sun care, baby care, make up, shaving, wet wipes, hand/nail care and hair care.

Olivem® 1000
(Cetearyl Olivate,
Sorbitan Olivate)

The industry's first PEG-free self-emulsifying biomimetic ingredient that supports a wide range of functions, including anti-aging, anti-redness, luminescence, hydration and maximizing the sun protection factor (SPF). This botanically derived, functional natural product is a complex combination of fatty acids, chemically similar to the lipidic composition of the skin. As a biomimetic restructuring agent, Olivem® 1000 restores and maintains the integrity of the skin while providing an emulsifying base. COSMOS approved.

Olivem® 900
(Sorbitan Olivate)

A PEG-free co-emulsifier for W/O and W/S systems, Olivem® 900 is designed to improve the dispersion of the mineral UV filters in sun care and powders in decorative formulations. The film-forming benefits also provide water-resistance properties. COSMOS approved.

Olivem® LV Flex
(PEG-8 Stearate, Glycerol Stearate, Cetearyl Alcohol, Sorbitan Oleate)

This versatile O/W primary emulsifier is specifically designed for light, hyperfluid and sprayable emulsions while ensuring a pleasant skin feel. Olivem® LV Flex is also able to emulsify a wide range of oils and shows good compatibility with various rheology modifiers for use in a wide pH range.

Olivem® VS Feel
(Cetearyl Alcohol, Cetyl Palmitate, Sorbitan Palmitate, Sorbitan Oleate)

This O/W emulsifier is engineered to increase viscosity and stability while imparting pleasant sensorial benefits to formulations. Olivem® VS Feel greatly reduces the "soaping effect" of emulsions, providing a soft, non-sticky after feel, high spreadability and excellent absorption. COSMOS approved.

Learn more about Hallstar's areas of expertise and formulated solutions, or use our unique online tool to create your own custom formula at www.hallstar.com.

